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ABSTRACT

Papers from the 1978 conference of the Higher Education Research and Development Society of Australasia are presented. A large part of the conference was devoted to a general symposium on accountability in higher education, while other topics were organization and administration of higher education, curriculum development and evaluation, staff development, and student characteristics and performance. Papers and authors are as follows: Opening Address: "Accountability in Higher Education" (E.H. Medlin); "The Costs and Benefits of Post-Secondary Education Enquiries" (N. A. Nilsson and P. F. Sheldrake); "In Need of Further Research on the Production and Productivity of Tertiary Education in Australia" (William Georgiou); "A Practical Model for Accountability in Higher Education--the DDIAE Experience" (L. J. Barker and L. J. McNulty); "Educational Brokering: A New Concept in the Business of Education" (I. McD. Mitchell); "To Maximize the Viability of an Enterprise: A Relevant Purpose for Administration" (Thomas M. Heffernan); "Course Development Assumptions and Strategies" (Rod Wellard); "Cooperative Course Design: A Case Study in Post Experience Education" (Dave Boud); "Student Reactions to PSI, Lecture and Laboratory Teaching" (R. J. Stening and K. R. Vost); "Tertiary Science Instructional Materials: A Cognitive Analysis" (M. T. Prosser); "Planning the Evaluation of a Major University Course" (I. H. Barham); "Staff Development: New Viewpoints and New Directions" (Norman C. Dennis); "The Enchantment of Lecturer Self-Confidence" (H. E. Stanton); and "The Needs and Problems of Part-Time Students and the Accountability of Administrative and Academic Staff" (Jason L. Brown). (SW)

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RESEARCH & DEVELOPMENT IN HIGHER EDUCATION

volume I

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Higher Education Research and Development Society of Australasia

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RESEARCH AND DEVELOPMENT IN HIGHER EDUCATION

Volume 1.

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PREFACE

The ~~fifth~~ fourth annual conference of the Higher Education Research and Development Society of Australasia was in many respects a departure from previous Association conferences. Perhaps the most important changes were in the structure and content of the conference: a large part was devoted to a general symposium on Accountability in Higher Education at which a number of invited and submitted papers were discussed, and to a series of workshop groups dominated for the first time by submitted research and development papers. It was in fact this substantial increase in papers that has led to the present series of conference proceedings. Hopefully it is only the beginning, and the encouraging trend toward writing rather than talking about current research and development activities will continue to establish a firmer academic base for the Association and its members. It is only through this, after all, that proper discussion and constructive criticism can develop our understanding of higher education as an important and distinctive area of academic study.

R.D.L.

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I wish to express my sincere gratitude to all the conference participants, and particularly to the contributors, for their part in establishing this volume of proceedings, and to Genese Threadgold and Leonie Koop for their considerable efforts in preparing the final copy.

R.D.L.

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ACCOUNTABILITY IN HIGHER EDUCATION*

E.H. Medlin

So all you cocky city coves,
Wot's savin' up yer screws
To get upon the land, look out
The land don't get on yous.
"Ironbark"

In their anthology of Australian Bush Ballads of the nineties, Douglas Stewart and Nancy Keesing have included "Jones's Selection" by George Herbert Gibson ("Ironbark") in a selected group of what they call "Tall stories and take-downs". Although unfamed for his style, "Ironbark" in this poem shares the craft of the poet and of the scholar in distilling the universal from the particular, and the last stanza, which I have taken for my introduction, can be read as an apt warning to all of us who are genuinely concerned with higher education.

The very term "higher education" is one which has been ardently embraced at least since the Robbins Report on "Higher Education" was published in 1963. Tragically there are many who see the term as an invitation to espouse the cause of what can reasonably be called educational leukemia, or if you like, the proliferation of unspecialised and undifferentiated educational bodies. There is ample evidence from the physical and biological sciences that complexity of structure is to be balanced with complexity of function if the system is to survive. An inability to specialise or to differentiate is in general lethal and at best tedious. The Robbins Committee did have at least a subliminal awareness of these hazards for social systems because the Report abounds with general wisdoms and with warnings such as: "To do justice to the complexity of things, it is necessary to acknowledge a plurality of aims". The level of literacy in this country allows us either to embrace or to abjure our share of what some call "modish wind-bags" who look but don't see, listen but don't hear and touch but don't feel. A distinction does need to be drawn, therefore, between cerebration on the one hand and intellectualism on the other.

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* Opening Address to the Conference.

It is certainly of more than passing interest that the present HERDSA Conference is addressed to the question of "Accountability". If the exercise were purely nominalist then no distinction could be drawn between "responsible" "answerable" and "accountable", which are defined by the Oxford English Dictionary to be synonymous; but like the evil that men do the etymology of words does live after them. "Accountable" carries connotations of its origins in the reckoning of value. "Responsible" has developed from "respond" which was a synonym for "answer": which meant to make a reply, generally sworn and therefore in truth. "Responsible" has come also to mean something like "reliable", "trustworthy" or even "respectable" and when applied to a person it can carry, to some, the implication that to hold that person to be answerable would be redundant and, sanctimoniously, even impertinent. I prefer to think that we should aim to be judged to be behaving responsibly by holding ourselves to be fiscally accountable and by asserting our answerability to the variety of communities that we serve through the winning, holding and disseminating of knowledge and, most importantly, of wisdom. But those communities and their agents are also answerable; rights and responsibilities are concomitants not just for some but for all, including governments. It was as long ago as 1790 that Edmund Burke said:

> Government is a contrivance of human wisdom to
> provide for human wants;
> Men have a right that these wants should be
> provided by this wisdom.

By identifying himself with the description of our governments as "elective dictatorships", Sir Mark Oliphant's comments recently have been both apposite and, hopefully, arresting. I shall return to the theme of the changing nature of answerability.

I do not claim to speak with any authority on aspects of Higher Education outside the University sector, but I know enough of the tertiary, quaternary and "quinternary" functions of Universities to agree with the thesis that University academic work is in truth *sui generis* and to assert that downright mischief can be, and is being, done by unrestrained "eager-beavers" who, it can be argued, do not even begin to comprehend what universities are really about. I have written elsewhere (Vestes XIX: 39-42, 1976)

> The necessary luxury to carefully objectively and critically observe, the insight to ask the right questions and to perform the right experiments, the faculty to form new concepts and to construct new mental tools and to make intuitive abstract generalisations from experience, and then to freely publish, is what Universities are really about. Taken together these processes describe the essential distinguishing features of academic work in Universities. In such ways is wisdom distilled from the great body of general experience. The sharpest of distinctions exist between those who wrestle inductively for new knowledge and those who operate deductively in applying a known body of knowledge for the benefit of society.

The traditions of universities are as ancient and honourable as those of Parliaments, and as the final bastions of freedom the universities have gone a long way in working out

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how to preserve the first and last of man's freedoms, namely the freedom of the mind, through the concepts of individual academic freedom and institutional autonomy. It is not necessary to re-rehearse here the accountings given by the Murray Report (1957) or the Duff-Berdahl Report (1966) both of which should be required reading for anyone pretending an interest in this topic.

In 1975 I attempted to review some developments and trends in tertiary education in Australia and to bring into public discussion and debate the insights of a variety of concerned educators. The paper, "A case for an Association of Australian Universities" (Vestes XIX: 5-13, 1976) has led to the Council of The University of Adelaide resolving that a prima facie case had been made for the need for a confederated Association of autonomous Australian Universities. The University has recently resolved to take certain positive steps in order that the mechanics of the Association can emerge. The paper gave an account of the erosion of the elements of University autonomy in the face of centralist pressures and anticipated the further erosion of autonomy in the face of provincial and local pressures. These have now arrived in the form of so-called Inquiries, State coordinating bodies of various sorts, proposals for a return to "shared funding" and so on. At the same time the Tertiary Education Commission has finally given up all earlier pretence of being an advisory body and is now fully integrated as a coercive, restrictive arm of government. The paper also attempted to review the then literature on answerability and argues among other things that, in taking notice of the changing nature of accountability, the co-existence of "authority and answerability is becoming increasingly a two-way device". Peter Sheldrake (Vestes XXI: 7-8, 1978) has recently asked the question "Accountable to whom?"; the issue debated in his paper seems to me to be really "Accountability to and of whom?"

Sheldrake's (re-phrased) question allows me to return to the matter of mischief. Much, but not all, of the recent spate of "university bashing" has been of the unreasoned, undocumented, prejudiced style favoured by newspapers. It is not easy to answer the "big lie" aimed to appeal to baser instincts but much effort has been put into reasoned submissions to the great variety of Inquiries at this present time of almost frenetic self-analysis. I must content myself with two rebuttals to the charge of the irresponsibility of universities. First, Professor Sir David Derham said in his ABC Guest of Honour talk (20 July, 1976):

> The truth is, of course, that from our early days Governments and Parliaments have established Universities either in response to public demand or partly in response to public demand and partly in accordance with deliberate governmental planning. The Universities themselves have always responded to public demand within the limits of their resources. The Universities have not had a flourishing boom time with unlimited spending powers. They have constantly been questioned about their work and their value. The truth is, that the real cost per university student has remained remarkably constant for more than twenty years and that it has been declining and under increasingly strict governmental supervision for the last four or five years.

Secondly, in his November 1977 address "New Challenges for the University", to the Senate of The University of Adelaide the Vice-Chancellor (Professor D.R. Stranks) drew attention to the honourable ways in which the University has traditionally met its legal and moral obligations to make both fiscal and academic accountings of its activities. In looking at the changing nature of accountability, he said among other things:

> I believe that the Universities have to stand up and be counted. It is a new challenge and it has

> got to be met. Personally, I welcome constructive criticism based on facts, but I do suggest that those who claim accountability in the public arena have also a responsibility to base their comments and their assertions on reasonable facts.

Not all recent proposals for higher education can be excused on the grounds that the proponents are not in a position to know any better. For example the Federation of Staff Associations of Australian Colleges of Advanced Education (FSAACAE) has been arguing at least since the Jones/Karmel/Swanston Panel (July 1975) for a Unitary Tertiary Education Commission with authority to approve or disapprove courses at all levels and with a recognisable infra-structure of State coordinating bodies. This is repeated by FSAACAE in its submission to the Williams Committee seemingly on the grounds that it judges that the lack of homogeneity that it knows to exist within the CAE's also exists within the universities. It does, however, make sense to argue that universities are autonomous and homogeneous whereas CAE's are neither. It does also make sense to argue that all sectors of higher education should aspire to excellence and that university autonomy tempered with voluntary liaison should be the ultimate model for all sectors. It is in my opinion grossly irresponsible to tear down hard won freedoms and to spurn hard won wisdoms without even trying to comprehend what those freedoms and wisdoms mean. To attempt to do it by using the coercive authority of the State (which is not synonymous with the community) is to emulate such famous free societies as Nazi Germany or the U.S.S.R. In any case, The University of Adelaide has flatly rejected those parts of the Anderson Report which if adopted would purport to give a Tertiary Education Authority of South Australia authority to exercise power over the University.

Wise men know that universities best serve the community when they are free. It is not for me but for others to resolve if and when the other sectors achieve the same freedoms. If not judged to be appropriate then so be it. The ultimate test of excellence is through achievement. Nobody, except possibly a churl, would argue that our (older) universities have not distinguished themselves on an international scale. It is thus that they honour their answerability and serve as a model for others, if they wish, to emulate but not to destroy or even to harm especially because of an unwillingness or perhaps an inability to work out the nature of their own answerability.

The time has come to turn the tide and to demand answerability of the plethora of mediocre pedants flung up in and around higher education over the last five years or so. It is tantalisingly easy for many to waste their time debating in-issues like "rationalisation" "coordination" and the like. The truth is that those who practise the higher education of our young are called to account for virtually every phase of our activity; we answer to our students, to our peers, for our research, to our paymasters and to local, national and international communities. Answerability must now be required of the trendies, sutlers and sycophants who smokescreen the contest by pretending that to "prose on" about educating is the same as or even better than doing it. The irresponsibilities of the T.E.C. are too numerous to catalogue here but a quick comparison of paragraphs 4.49 and 4.50 of the T.E.C. Report for 1979-1981 with paragraphs 1.2 and 1.4 of the Sixth Report of the Universities Commission gives cause for massive concern. The draft Report of the T.E.C. on Study Leave is another example of how to "prose on" in order to bewilder. The glibness of the Working Party beggars belief. Universities and their staffs have been prepared for years to defend the arguments that "tenure" and "study leave" derive from the notion of academic freedom but, perhaps interestingly, the only reasoned response to have emerged is from the Academic Salaries Tribunal. There are disturbing signs that academic excellence might have to be preserved through industrial activity. The T.E.C. is indistinguishable from the Government and the Universities Council role is merely that of a pawn to beguile the universities into acquiescence. In any case it is clear that there is a need for some Churchillian 'defiance' if higher education is not to succumb to what Alistair Cooke calls "the malaise of the western world". Such a malaise is evident in higher education in Australia in the uncertainty, indecision, confusion and downright bewilderment resulting from mob tyranny cynically overseen and perhaps even orchestrated by oligarchs.

I am sure that good can come of a thoroughgoing examination of "Accountability in Higher Education", but only if conducted with courage and in order that we can provide an even better service to the people. Although therefore not irrelevant, the exercise is really peripheral to our main purpose where, I repeat, the ultimate test is through achievement. Nothing will be gained and much, if not all, will be lost by continuing to be defensively neurotic or neurotically defensive.

So let us preserve what we know is good and fight to make it better. A little rhetoric does no harm in a fight; nor does a battle-cry; an appropriate one in all the present circumstances might well come from the South Australian poet, C.J. Dennis, with his

'Eave yer bloody apathy
Down a bloody chasm
'Ump yer bloody burden with
Enthusi-bloody-asm.

"Den"

THE COSTS AND BENEFITS OF POST-SECONDARY EDUCATION ENQUIRIES: A CASE STUDY

N.A. Nilsson
P.F. Sheldrake

Post-secondary education enquiries, like sunspots, have roughly a ten year cycle, and like sunspots too they produce considerably more heat than illumination, disrupting ordinary communication in the process. We are now rapidly approaching the climax of the present cycle which has proved to be an unusually severe one. In recent weeks we have seen the appearance of the Victorian Partridge Report and two chapters of the Anderson Report; and all this comes hard on the heels of similar State reports from Western Australia and Tasmania, renewed though rather less public activities in New South Wales and (again) Tasmania, and the looming presence of Itself - the Williams Inquiry. The question to be asked is, quite simply, where is all this endeavour getting us? We can begin by looking at the Partridge and Anderson reports and their recommendations.

There was at first a feeling of relief with both the Anderson and the Partridge reports. With the universities it appeared that much of the threatened talk about future changes had once more come to nothing. With the colleges of advanced education (CAEs) there was confirmation of their earlier predictions about likely mergers and rationalisations: with real recommendations now instead of furtively discussed possibilities. On the whole, however, both reports seemed to be more concerned with tinkering with the present system and small scale tidyings rather than any major restructuring of tertiary education.

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But gradually attention became focussed on one particular area. A most interesting change was evident in the Anderson Report's chapter 10 (Anderson, 1978) with regard to State coordinating bodies and the role of universities. The idea of a State coordinating body is, of course, not new and the prescient observer of the North American scene has long recognised the inevitability of such bodies being set up in Australia. Indeed, the State coordination of colleges of advanced education has long been reality. More recently we have seen the emergence of coordinating bodies whose responsibilities extend right across the tertiary or post-secondary arena. Two such bodies already exist. In Western Australia there is the Western Australian Post-Secondary Education Commission (WAPSEC) and in New South Wales, the New South Wales Higher Education Board (NSWHEB). Now the proposal is for a Victorian Post-Secondary Education Commission (VPSEC) together with (the apparent nigger in the wood pile) the somewhat engagingly named Tertiary Education Authority of South Australia (TEASA).

What makes Anderson's proposals for TEASA stand out is the recommendation that this body will not merely have the usual powers, namely to "examine and approve proposals for the establishment of new courses in non-university post-secondary education institutions" (as with WAPSEC), or "assess the suitability of courses of study as advanced education courses" (i.e., college courses; as with the NSWHEB), nor even just be "empowered to discuss with the universities their requests for funding and their proposals for new academic developments" (as in the proposals of VPSEC). In the case of South Australia, TEASA will have the power to "approve any new course in a tertiary institution" and "to request any tertiary institution to introduce a course or discontinue an existing course". And there are no ambiguities here: "tertiary institution" includes the universities. In other words, Anderson's recommendations represent a step in the direction of giving the States significant new powers in relation to the universities as well as other post-secondary institutions.

The significance of this proposal can be seen in the broader context of recent Commonwealth-State relations in education. For the last year or so there has been an important, often acerbic, debate between the States and the Commonwealth over changes to the existing arrangements for the funding and administration of post-secondary education. At present, universities and colleges of advanced education are wholly funded by the Commonwealth through the Tertiary Education Commission and its Universities and Advanced Education Councils. Technical and Further education, however, is already on a shared funding basis between the Commonwealth (The Technical and Further Education Council of TEC), and the States. This somewhat anomalous situation looks even odder - at least, it seems, to Commonwealth treasury officials - when the comparison is extended to primary and secondary education funding which is approximately in the ratio of 1:4 for Commonwealth:State contributions. There is some pressure to rationalise these arrangements, at least at the post-secondary level, and largely in the name of giving the States "a greater role in directing post-secondary education". No-one is quite clear what this means except that it is likely that the Commonwealth might look to a situation where the States "top up" funds for colleges and universities in the same way they now do for technical and further education. Some States would appear to prefer block funding, and thus be able to decide themselves on internal priorities. The States may well find themselves having to make tough decisions about the allocation of funds between these sectors as money remains tight, and thus collect the odium which would otherwise accrue to the Commonwealth. At the same time the

Commonwealth would still be able to direct the overall structure of the post-secondary field by ensuring its contributions are specifically tied to institutions and to specified purposes, through the Section 96 grant system.

Another related recommendation in Anderson's report deals with course accreditation. Universities have always been self-accrediting by right. In the proposed terms of reference for TEASA, Anderson actually recommends that TEASA should be responsible for course accreditation and then goes on, as if giving it all back again, to say that the two South Australian universities will of course "automatically" accredit their own courses. But of course he has not given it all back. The Universities will be accrediting their courses not by right but by leave of TEASA and, what is more important, that leave could be withdrawn at any time in the future.

Anderson's proposals might mark a step in handing back some powers to the States. The interesting question remains as to whether or not the Commonwealth will actually welcome this proposal. Too great a role in deciding the structure of post-secondary edcuation is precisely what it appears the Commonwealth Government does not want to give the States. The power to approve or discontinue courses would mean that the States could wield considerable power over the universities and hence substantially determine the way in which Commonwealth funds were actually used. Apart from angering the universities Anderson may well find that his proposals attract a fairly cold stare from the TEC as well.

All this received a further impetus when the Partridge recommendations were debated in Victorian State Parliament. Here it was argued that, contrary to the Partridge recommendations, the universities should be included in the

VPSEC in the same way as the other institutions. This would mean that VPSEC too would have powers relating to course approval and even to university staffing arrangements, the latter representing a very significant increase to the power of the States over the universities. It remains to be seen of course what will actually be adopted, but it is certainly no secret that the Victorian Government desires much greater control over post-secondary funding.

Whatever we might think about these various proposals, one concern which might well be shared by partisans on both sides is whether it has all been worth it - the "State Enquiry" approach, that is. Do we really need to spend all that money to come out with the sorts of recommendations that these Committees have produced?

Let us take Anderson as an example. It is said that this Enquiry began when the South Australian Minister for Education decided that, because of certain "border disputes" between the Department of Further Education and the Board of Advanced Education, a working group should look into the matter and make recommendations. It was with this time scale and set of concerns in mind that people were first approached on the matter. But then things just grew. A reasonable estimate would now put the Anderson Enquiry at something around two years duration, at a cost of perhaps half a million dollars, and - well, and what else? In 1971 Peter Karmel recommended, when chairing the Committee of Enquiry into Education in South Australia, that the Tertiary Education Commission be set up. Seven years later, and not much advanced on that, the same proposal reappears. In 1977 the Board of Advanced Education's Forward Planning and Development Committee, as a result of a review group set up some time before Anderson was underway, recommended a number of rationalisations within the CAE sector. Briefly these included the following: that account should be taken of a steady state in student demand; that a continuing review of pre-service teacher education courses be established; that multi-level colleges be considered (particularly in areas like Noarlunga, Mount Gambier and the Riverland); that the two Whyalla colleges merge; that the Murray Park and Kingston colleges merge; that Roseworthy Agricultural College and the South Australian Institute of Technology develop closer links; that Adelaide CAE be closed and that sections of Adelaide CAE be merged with either Torrens or Murray Park CAE or S.A.I.T.; that a Committee be set up to develop external studies; that Salisbury CAE develop links with the Department of Further Education to encourage further education courses there; that Sturt CAE and Flinders University look to closer cooperation; that the Flinders Street College of Music be absorbed by Torrens; that improved procedures for transfer of credit be established; and finally that where mergers or changes are proposed, these be undertaken through joint working groups set up between the institutions concerned.

Now nearly all these things are just the ones that Anderson has either recommended or is likely to recommend. Indeed, apart from the recommendation to set up TEASA (which we have already noted was recommended by Karmel) Anderson seems to have added remarkably little to the work of the Board of Advanced Education which only cost 78 dollars and forty eight cents. It may be difficult to assess what makes for "good value" in an enquiry, but to pay $500,000.00 and come up with nothing new does not appear to be a particularly efficient use of resources.

Of course one could put all this to one side and say, well, that's the nature of the political process and we need the endorsement of prestigious groups such as these to ensure that the public recognises the value of proposals which may well have been made elsewhere. Indeed, it may even be argued that although we are doing no more than recognising where we have got to, this act of recognition is itself a good thing. This, however, is to neglect one very important aspect of these enquiries, that in the process of achieving these less than unexpected outcomes we may let loose all kinds of evils. Unlike sunspots, the post-secondary enquiry phenomenon is something we bring upon ourselves - but then again it is an affliction we can do something about.

In asking whether they are worth what they cost we have already raised the matter of their accountability; and the immediate financial burden is only the tip of this iceberg. To arrive at a judgment in calling them to account we should have to make a list of costs and benefits, and this would include other than financial values. Some of these may be convertible into financial terms (e.g. wasting of time writing false submissions) but most cannot. How far, for example, do they contribute to the malaise and cynicism in this bloated and puffy child of the seventies, where staffing is arranged on a seller's market and where for some years rewards have far outrun available merit? And how far, too, do they contribute both by example and impulse to a lowering of the intellectual standards of the enterprise they are supposed to be investigating in the name of efficiency? And in general as to this accountability, how far are they to be judged on other criteria than the smiles of politicians and readings on the agony-meter? How far indeed might they be used as an instrument (for political purposes, say) for eroding some of the very intellectual values which we might have expected them to conserve? But where are we to start?

We should start with a clear appreciation of that characteristic by which they differ from all other kinds of social enquiry. An enquiry of this kind, namely into the knowledge industry itself, is distinctive in that it is a part of the very enterprise it is investigating. The relationships upon which the foregoing possibilities were predicated are extremely and quite distinctively intimate. Nor is their accountability the only thing they share with the enterprise they are set up to investigate. Remembering that a sunspot cycle is a clustering phenomenon we might well, in calling these like enquiries to account, raise certain other currently popular considerations too. What about "coordination and rationalisation", for example? And this is not merely a rhetorical trick. More and more there is a tendency for an enquiry to take root and flourish as a Tertiary Education Committee amidst a collection of other similar TECs, with the occasional and temporary "expert" being transmogrified into a well-paid civil servant. But is the careful orchestration of all these various effects to be seen in the long term as a benefit or an evil?

We shall deal with the question of their accountability first. Post-secondary committees of enquiry are set up to examine the knowledge industry, and there are important differences between this kind of investigation and all other kinds of social investigation. This is not necessarily to say that its difficulties are greater (although this might be the case); only that some of them are quite distinctive. Other areas might well have greater difficulties of their own kind. But an enquiry into the knowledge business, as well as having to cope with all the slipperiness of the fishing industry or the hard sell of the real estate game, has one distinctive set of troubles of its own: the general problem of the observer reacting with the social phenomena to be observed is exacerbated because of an intimacy of relationship which is quite impossible elsewhere. And this is of enormous practical importance. The object of such an investigation is the knowledge industry itself, both for itself (one hopes), and for other enterprises dependent on it. And the activities of the investigating team are inescapably a part of that industry: for whatever the concessions made in the direction of democracy, or common sense, or cultivated amateurism, or the representation of interests, the people involved in an enquiry are required to talk sense, and what is more, to embody this in a document. They are required to give an account of a state of affairs for possible action, and indeed to produce argued recommendations to this end. They are required, in other words, to produce a piece of educational theory. And in so doing they are subject to the same intellectual canons which govern the industry they are investigating. But which particular ones?

It might be objected: but their job is to produce educational theory and they are surely expected to do more than look into the affairs of educationists. Indeed, we deliberately avoid hiring educationists if we can, and call instead upon the services of philosophers or economists or physicists or intelligent and senior public officials. What is more, not all reasons relevant to such recommendations as have to be made are educational reasons. The recommendations must be made in the real world and must therefore include hard economic and political considerations.

We shall deal with the second objection first. This is to confuse educational reasons with educational values. One cannot simply state that intellectual values must always be of over-riding concern. Sometimes, as in the consideration of the health of an individual or the survival of the State, hard decisions have to be made to budget our resources in other ways. But in cases like these we need arguments and these would be educational arguments; even to the argument that (to preserve one's eyes or one's reason) one's education might have to be set to one side, if only temporarily. When, for example, we protested about the shoddiness of the Report on a Fourth University for Victoria because the recommendations were influenced by political considerations, we were not denying the educational significance of considering universities or colleges as "industries" in the economic sense (as C. Selby Smith does in *Regional Colleges* - C. Selby Smith, 1975). We were relying on a distinction between, on the one hand, educational argument which takes political considerations into account, and on the other hand, political concession dressed up as argument and carrying the imprimatur of senior academics who should know better (Nilsson and Sheldrake, 1977). (When the decision has been made simply to give way to political considerations, these considerations are then called "political realities").

The other objection above was that the intimate connection to which we have drawn attention can at best be drawn only between the enquirers and *part* of the post-secondary sector. They are merely operating as educationists. There are some things, however, which they must share with the whole industry. There are rules to be observed which make for minimal clarity and consistency wherever people are claiming to deal competently in intellectual matters, and even here the standard is often deplorably low. But even if we restrict ourselves to reasoned discussion *about education* this includes a range of activities far wider than the operations of labelled practitioners. There is a great deal of critical discussion on the problems of tertiary education, most of it informal, by all kinds of academics - just because teaching is their job. It is true that when a chemist talks about teaching in chemistry his theoretical failures may not in general count against him as a chemist; but this immunity cannot be appealed to so readily when one's discipline is of direct relevance to that non-subject Education. And it is not all social science, either. The contributory studies to educational theory can be located within a range which stretches from economics to literary criticism. Patrick Morgan at Gippsland, for example, writes brilliantly about our current difficulties (too brilliantly, it is said, for his own good) from a base in an English department (Morgan, 1977) drawing clearly on the skills which such departments ought to provide. And similarly for economists, political scientists and so on, when they turn their attention to educational matters.

According to this picture, then, the intrusion of a post-secondary enquiry is a very delicate probe having all kinds of side effects. For one thing it has already stimulated a whole industry of submission production in which complex issues of higher education are argued under the encouragement of threatened closure and redundancy. For this to be converted into a general benefit there would have to be a very strong tradition of rationality and intellectual independence in those objective tribunals. And this is just what has been conspicuously absent from many of them. The pressures to engage in cynical self-advertisement and the controlled (though often furtive) slander of competing institutions are almost irresistible. But even then something could still be achieved if there were a strong tradition of intellectual leadership in the enquiry tradition itself. There is now a considerable body of report writing from which the submission hacks can take their cues; and it is far from edifying. Who would look to their independent committee of experts to save them on educational grounds (however just their claim) after they had read, say, the Karmel Tasmanian Report which effectively closed down the Tasmanian CAE (Karmel, 1976)? So we get the production of enormous quantities of paper produced not for mutual illumination but by way of ammunition in a war of slander and power-play, in an atmosphere of rumour and counter-rumour, in a game of denigration and window-dressing. The three enquiries currently reporting, or about to report (Partridge, Anderson and Williams), have generated something like 1000 submissions and supporting papers. (The number of submissions to the Williams Inquiry is 555, exactly the same as the number of key-board sonatas written by Scarlatti, but offering far less variety.) On bond paper this would tip the scales against three enquiry chairmen in the other pan - provided, admittedly, that one was fairly light-weight (and that doesn't seem very difficult to arrange). At present there are a number of enquiries going on at the same time and they all trade documents so that the quantity of material to be read is enormous; and of this (though much of it is publicly available) the majority of the post-secondary practitioners themselves are entirely ignorant. And what, for that matter, does our half-million dollar seminar of part-time slow readers do with all that? They are in the hands of secretaries and politicians and "expert" chairmen. When you are being snowed upon in these quantities how do you ever find out what is going on? Now add to that the consideration that the spirit informing much of the industry behind this paper production is explicitly and cynically designed to deceive. Whether or not there was division, lack of cooperation and lack even of elementary communication before the current season of enquiries began there certainly is now. In the few pages left we shall illustrate what we see as essentially an intellectual failure: not as we have done before in the case of the enquirers themselves but in the case of their victims.

The Anderson Committee in South Australia has recommended a merger between the smaller and older Adelaide CAE and Torrens CAE, to be "completed as early as possible". The Adelaide

CAE has all along protested its preference "to retain its own identity" (Anderson, 1978, pp. 21, 18). But this is metaphysics. The combined institution is perhaps to be called "Adelaide CAE", and the old Spanish mission building in the City to be retained. So what remains to be satisfied apart from individual ambition and perhaps a concern for quality or tradition? But let us look now at the performance of Adelaide CAE in the submission business since the threatening post-secondary committee was set up, and especially since the BAE came forward with its recommendation that Adelaide be closed down (Adelaide CAE, 1976, 1977a, 1977b). And let us be quite clear as to what the academically best and academically best led of the ex-teachers colleges in South Australia can be reduced to in the world of hard-sell. What can a principal who is a scholar in an institution with a scholarly tradition do in the league matches where colleges are quite cynically regarded as big businesses and their nomadic chiefs chosen on criteria usually looked for in encyclopaedia salesmen? "Comparisons are odious", says Adelaide (Adelaide CAE, 1976, p.2), but please remember that quality is important. And I suppose it is hard to realize from inside that quality doesn't much matter in the pragmatic world of post-secondary rationalisation. Here it is all a matter of mergers, real estate, industrial muscle and public relations. (There is a fine passage in their second submission (Adelaide CAE, 1977, p.2) in which they really do attempt an objective assessment of the situation as a whole, including and despite the awful game they have been asked to join.) But what sort of a guarantee is it after all - this appeal to present excellence? This can change so quickly in institutions as vocationally tied as the CAEs. It only needs a moderate shift in the market. The sad thing is that the appeals to quality and distinctiveness are probably in this case justified. But the whole exercise trails off in a series of rather pathetic quotations from the accrediting body: about how their judges thought their B.Ed. was "dynamic", and how they were "favourably impressed" (Adelaide CAE, 1976, pp. 19-20) with practice-teaching arrangements, etc., etc. : for all the world like an elderly soprano going through her press-cuttings. And when they are finally gobbled up by their daughter institution, Torrens CAE, the whole outfit might well be called, if they are lucky, "Adelaide Teachers College", so what's all this about our not having a sense of tradition?

The problems here of assimilation, however, are scarcely academic at all. It is likely to be managed as an operation in public relations. Adelaide CAE is an old-fashioned institution which teaches old-fashioned disciplines like History and English. But many CAEs have been frightened by the ambiguous statements in the various Reports of the Commission on Advanced Education - about the necessity for "vocational" programmes and the undesirability of imitating the universities. The BAE in South Australia has taken a very narrow interpretation of these warnings and most of the local colleges have decided to play it safe. Torrens has been doing its best for some time to get rid of, or at least to camouflage, the presence of anything as reactionary as an academic subject. Last year the liberal studies remnant seized the opportunity of a public enquiry to prepare a submission about their difficulties, but they were not allowed to send it. But now the Anderson Committee, in addition to wishing the Adelaide CAE on them, has indicated a favourable attitude to liberal studies in CAEs in the guise of "general education" (Anderson, 1978, p. 14). The activity at Torrens is now intense, but of course it is a public relations activity. The epistemological climate in the CAEs is very flexible . This is one of their main sources of pride. All knowledge (indeed Everything) is really One. There won't be too much trouble with something as sloppy as "general education". Setting about this re-christening job in a workmanlike manner an ad hoc committee has already begged most of the questions and pre-empted the likely objections by producing a new list of "liberal studies". English, History, Chemistry and other antique signposts of a discredited elitist culture will now become decently inconspicuous, until their entrepreneurs can be re-trained or die of hardening of the arteries. Such subjects won't even be noticed when they take their places among the crowd of topics on Torrens' list - which currently includes "applied electricity", "fabrications" and "clay". And, of course, for any conceivable subject it is possible that some genius could transmute it into the vehicle for a liberal education. After all, the Sumerians built a whole civilization on clay. But let us get back to the real world: the CAEs in South Australia. Here the educational output is measured in terms of glossy brochures, and the intellectual initiative lies with committees for curricular obfuscation. Thus, it seems, will Adelaide be at last re-united with her daughter in what Matthew Arnold would have called "a Thyestean banquet of clap-trap" (Arnold, 1965).

This unfortunate CAE has been for many years close neighbour to both a university and an institute of technology, from each of which in times of extremity it has held out some hopes. These other two institutions have no qualms about the odiousness of comparisons. They haven't been smiling, dear Adelaide College; they have just been opening their mouths a little wider. Not that The University and The Institute (as they are known to themselves) have all that much time for each other; but they share very firm ideas about their "sister institution" (to quote that happy phrase which the University of Tasmania uses to refer to the Tasmanian CAE). The Institute looks back nostalgically to a time when the CAEs were teachers colleges and knew their place; and when the Institute had a monopoly of what they regard as the real business of advanced education (South Australian Institute of Technology, 1976, pp. 23-25). The Institute by its own admission is one of a very small group of "true CAEs", the only other examples of which in South Australia are so small that they could readily be absorbed by any decent sized institution as departments (especially by one as big as The Institute). As far as The Institute is concerned "the ex-Teachers Colleges", as it calls them, might just as well be lumped together again to form a single teacher education unit. But then again if there does happen to be anything left over in this line of business, or if this business miraculously picks up, it is quite prepared to do a bit of teacher training itself.

Back in 1970 Dr. (now Professor) Mills, the author of this Institute submission, wrote very differently about the Institute vis-a-vis the University of Adelaide (Argue, 1970, pp. 7-8). Those were the stirring times when Eric Robinson was exhorting the new (and therefore, of course, "exciting") CAEs to "compete" with the universities and to resist any attempt to define a merely "complementary" function for them (Golding, 1970, p. 17). "Certainly" said Dr. Mills then, "in South Australia the South Australian Institute of Technology has been almost invisible under the shadow, physically as well as spiritually, of the University of Adelaide, and I suppose this must have been one motive for the relocation of the Institute on a new campus well separated from both Universities". "I would be most interested", he said, "to try to discover exactly what it is that is so unacceptable about the universities". "There is such an apparent unanimity that the CAEs must not be allowed to degenerate into universities....". But more than anything, he warns his staff, they must heed the warning "not, in a phrase dear to our own Director, to ape the universities...".

But things have changed, and times are bad. Whatever "our own Director" may have said back in 1970 the good doctors at the old School of Mines now call themselves "professor" to the great delight of the locals. Professor Mills stresses in his institution's submission to the Anderson Committee that they should not forget how much the Institute has "benefitted from its long association with the University of Adelaide, mentioned earlier" (The South Australian Institute of Technology, 1976, p. 5). And I don't suppose you can blame them. "In all this", says Professor Mills, "the Institute is behaving as a mature institution".

It is in the matter of teacher training that we get some insight into the real politics along the borders. The official University of Adelaide report is a fairly lofty one. The University hasn't, like the Institute, the distasteful job of disowning its poor relations: indeed, as a university with cosmopolitan connections it need scarcely acknowledge the existence of other institutions. But now it has been asked to do so by an intrusive committee, and must get together its supplementary submission. It is aware, of course, of certain false rumours. It raises its eyebrows and begs the Enquiry to forward any such allegations for summary disposal (The University of Adelaide, 1977, p. 37). "But cooperation requires a little give as well as take", they said. We all need students. Nevertheless the University of Adelaide is "strongly opposed" to inclusion in any "Tertiary Education Coordinating Board at the State level". Certainly such a body could well keep an eye on and "exercise some useful restraint on CAEs", who if they get the chance will certainly poach on University "functions". Functions? Well, perhaps there might be "some overlap" (emphasis added) where the universities may develop at their own discretion and from their own distinctive point of view something which the CAEs also do in their own way. The

University concedes that in professional training a shared end-on pattern might be possible - and they mention the case of legal studies which they share with the Institute. As long as considerations such as "staffing" do not give rise to difficulties (The University of Adelaide, 1977, pp. 40, 42, 45, 45-46).

But what about teacher education? Adelaide CAE offers a post-graduate diploma in Education for student teachers with university degrees. Is this to be encouraged? The university itself does not comment but the University Department of Education in a separate submission has a lot to say (The University of Adelaide Department of Education, 1976). It is mainly twaddle; but would it nevertheless, by the very fact that it was written by University staff, reflect what the University might call a "staffing difficulty"? Like the Institute they look back nostalgically to the days before CAEs were invented. Universities, they believe, are inalienably vocational institutions. There is, they admit, a need for a kind of non-university "post-school education that is closely responsive to community needs and demands", and which is conveniently enshrined in the "idea of a community college". Not that the universities ought not also to have a role here if they choose. Indeed the University of Adelaide, they point out, was until the 1950s a bit like a community college itself. But there is undeniably a need for a kind of community education which the University need not necessarily have to participate in if it doesn't want to. And that's where the CAEs should be placed - fairly and squarely. They should become community colleges. But the Institute on these criteria would become a third university! Why not? All this would involve "phasing out or contraction of the teacher training functions" of these ex-teachers colleges. And incidentally, "the existing Department of Education" in the University of

Adelaide "will need to be developed". Insofar as there is any argued case for all this it goes something as follows: "Education is the pursuit of understanding". The pursuit of understanding is essentially the business of universities. Therefore everything that involves understanding is essentially the business of universities including all vocational training "beyond mere training of the most basic mechanical skills" - because this "leads necessarily to the development of advanced studies, research and scholarship" (our emphasis). So much for: Where? Now for: How much? "It is hardly rational to wish to restrict or limit such pursuits". "There cannot be an excess of educated people". And in particular; "To reduce drastically the number of students in universities would be the first step towards dissolution".

The premises are either silly or tautologous, and the arguments do not follow. But there is no doubt that by association of ideas we are nudged along into entertaining the idea that the University of Adelaide Department of Education ought not to get any smaller (The University of Adelaide Department of Education, 1976).

All this was too much for Adelaide CAE and in the subsequent Battle of the Platitudes they encouraged one of their own senior educationists to try to beat their traditional adversaries at their own game. "The needs of individuals and society are best served by education which is appropriate to their needs", he thundered. "Extended education without appropriate rigour lacks real value" (Adelaide CAE: Walker, 1977). In this war of giants what is there left for us to do but stop our ears?

It is instructive to note here, because it is so much more blatant than in the general University submission, that even staff in universities who openly advertise their vocational concerns are yet able to deny that they ought to be "brought under the aegis of any State post-secondary educational authority" (The University of Adelaide Department of Education, 1976, p. 11).

Much of this is predicated on the assumption that universities are above parochial control because they are centres for the realization of "the ideal of disinterested scholarship", and are places where the student teacher "for a few years comes into contact with advanced scholarship" (The University of Adelaide Department of Education, 1976). But this is dangerous stuff on two grounds. First, student teachers go into the schools not to teach Education but to teach Physics, or English or Mathematics or History; and contact here with advanced and even disinterested scholars is quite compatible with the kind of shared end-on arrangement acknowledged in principle, as we have seen, by the official University statement. They don't need to come into contact with educationists in the University at all. And, secondly, what are we to think of a document like this submission by the University of Adelaide Department of Education as a work of disinterested or even of moderately advanced scholarship? There are many people in universities who talk nonsense about what they are doing, especially when it affects their survival. And this is so even with otherwise excellent scholars in Physics and English, in Mathematics and History. But in all this, Education is quite distinctive and very vulnerable: and this is perhaps unfair. When they talk about what they do they show what they can do (or at least what they are prepared to settle for when pressed). There is no escape, however: for when they do so they are practising no other discipline but their own.

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IN NEED OF FURTHER RESEARCH ON THE PRODUCTION AND PRODUCTIVITY OF TERTIARY EDUCATION IN AUSTRALIA

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In recent years the United States of America, Europe and, to some extent, Australia have witnessed an upsurge in the concern with and research efforts on the effectiveness of educational institutions in learning, and on the success with which physical and human resources are utilised within the educational system to achieve given objectives.

The reasons behind this trend are not difficult to find and they can be attributed to two main factors. Firstly, the growing share of national income allocated for the provision of educational services has increased the interest of legislators, administrators as well as academics in finding out whether the social returns received from additional investment in education are sufficient to justify the necessary expenditures involved. Secondly, the slow-down in government financial support which followed earlier periods of accelerated growth, coupled with declining student demand and adverse demographic changes, has highlighted the need for more appropriate resource allocation decisions, not only for the purpose of satisfying public accountability requirements, but indeed in many cases for ensuring the survival of educational programmes and other activities.

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A considerable part of the research on these matters has been carried out making use of the economist's concepts and tools and, in particular, the theories of production and resource allocation. The present paper follows this general approach and is concerned with some of the important issues affecting educational production economics research. It is broadly divided into three parts. The first part provides a brief outline of major earlier research on estimating the determinants of educational production and evaluating productivity in education. In the following section an attempt is made to assess the validity and reliability of the assumptions forming the basis of these research studies and to consider the relevance of alternative hypotheses, with particular reference to tertiary education. The final part points to some of the implications of the discussion for the formulation of educational policy at both the institutional and national levels.

For the benefit of those not familiar with economic and statistical theory, consideration of the technical aspects of the topic has been kept to a minimum. It must be emphasised, however, that an empirical application of the theoretical principles outlined in the paper requires both considerable knowledge and rigorous application of econometric and statistical techniques.

AN OVERVIEW OF RELATED RESEARCH

Since space and time limitations will not allow a complete survey of all contemporary research studies on the importance of educational institutions for scholastic achievement and the estimation of an educational production function (which specifies the technological relationships between educational outputs and inputs), the present discussion must be contained within the bounds of a representative sample. However, selection of the components of this sample cannot be an entirely objective procedure and therefore studies deemed by some to have been important may have been omitted. The criteria for choosing between the number of existing research efforts are twofold: firstly, that the investigation opens up new avenues to our theoretical and practical knowledge of the learning process, and secondly, that the analysis carried out can serve as the basis of further research and facilitate comparisons with other available findings.

One research work which satisfies these criteria is that of Coleman et al. (1966) which assesses educational inequality in the American school system. Although devoid of an explicit methodological model of the educational process, the Coleman study was based on the assumption that the educational performance of students could be related to factors representing the contemporaneous influence of characteristics of their family background, the social composition of the school, the students' initial endowment or innate ability and, finally, the quality and quantity of the educational inputs available, such as teachers, library books, and so on.

The findings of the Coleman report were a challenge to conventional wisdom about the effects of schools on scholastic achievement and social equalisation and, as it was once said, they provided a powerful critique of the myths of American education (see Mosteller & Moynihan, 1972: 5). Briefly, the main results that emerged from the study suggested that family and socio-economic factors were by far the strongest determinants of student performance, in contrast to school resources which appeared to have only a small bearing on achievement; among school resources, teacher characteristics were of some importance, but other indicators such as expenditure per student, volumes of library books and so on, had little or no effect.

A study in the U.K. similar in origin and objectives to the Coleman investigation was the Report of the Central Advisory Council for Education (England) (1967), usually referred to as the Plowden Report. Concerned primarily with the issues affecting the primary education of children and their transition to secondary education, the researchers sought to establish the factors underlying the educational achievement of students. Following the evaluation of collected data, it was alleged that parental attitudes were considerably more important determinants of educational achievement than either home background factors or school inputs. Of the school inputs group, the quality of teachers was found to be most closely related to school performance as teachers with more experience and better training appeared to be associated with higher levels of achievement.

Research carried out by Bowles (1968, 1969) for the purpose of specifying and estimating an educational production function, explored the conceptual and methodological problems involved in the subject and provided a framework of basic ground-rules for the design and implementation of such an empirical investigation. Central in Bowles' research work was the attempt to estimate the parameters expressing the structural relationship between educational output and educational inputs. As in previous studies, variables chosen to represent the relationship included an array of social class and school service factors, but in addition, Bowles attempted to provide a rudimentary model of the learning process in support of the *a priori* specification of the postulated links between the variables.

The conclusions of Bowles' studies are in contrast to previous suggestions that school resources have only small effects on student achievement. Without denying the importance of family background factors, Bowles argued that

that school service variables were significantly related to school performance and that the poor results derived by earlier research works, in particular the Coleman study, could be attributed to inappropriate statistical analysis.

In the Australian context, the effectiveness of the school system has been the subject of two notable studies, one carried out by Keeves (1972) and another, which formed part of the I.E.A. Science Project, evaluated by Rosier (1974). The objective of Keeves' work was to investigate the interaction between scholastic achievement and the structural and environmental effects of the home, classroom and peer group. The study's empirical findings suggested that structural variables of the home environment had only a small direct effect on achievement, but that they could influence performance indirectly via their effects on attitudes. In addition, and rather surprisingly, Keeves associated greater scholastic achievement with larger class sizes, at least within the range of 15 - 45 students per classroom. Results on teacher characteristics, however, were more in line with previous conclusions suggesting that experience and special training were significant contributors to student performance. Finally, Rosier's results indicated a positive relationship between school service components and educational performance and, in particular, achievement in science appeared to be linked with the availability of ancillary staff, careful planning of courses, preparation of teaching material and dedication of teachers.

The survey has thus far been restricted to research studies, the prime aim of which has been the assessment of the effectiveness of schooling and the specification of the structural relations of production. A closely related field of research is the one concerned with the productivity of the educational sector (this is defined as the ratio of educational output to educational inputs. More details about the nature of the outputs of and inputs into education are given in the following section.)

A longitudinal investigation into the productivity of the British university system was carried out by Blaug and Woodhall (1965). The research was based on an analogy between productivity analysis in an industrial environment and in education, but the analysis was extended beyond the productivity of labour inputs as is often the case with investigations of industrial productivity. The methodological approach of the study involved the construction of composite indices of educational output and inputs and the comparison of the resulting output/inputs or productivity ratios. On this basis, the authors concluded that there had been a steady trend of declining productivity in British universities in the period 1938 - 1962, implying increased resource costs for the production of the same educational product. This phenomenon was largely attributed to the alleged failure of British universities to innovate and to adopt new technological methods of instruction.

Following the adoption of an analytical framework similar to that of Blaug and Woodhall, Hettish (1971) also reported a decline in the productivity index of Canadian universities between 1956-57 and 1966-67, but he took the view that students' foregone earnings rather than technological innovation played a dominant role in determining this trend.

Although the narrow survey here clearly provides an insufficient basis for firm conclusions, at least two observations appear to be in order. Firstly, research on the effectiveness and allocative efficiency of the educational system has been carried out using a number of conceptual and methodological approaches and data of differing quantity and quality. It is scarcely surprising, therefore, that the findings often exhibit a significant degree of variation and inconsistency. Secondly, it is possible that improved research results could be obtained by replacing some analytical assumptions with others more theoretically justifiable and/or amenable to improved methods of measurement. These considerations are examined in more detail below.

IN SEARCH OF ALTERNATIVE MODELS OF ANALYSIS

Once the research on educational production and productivity has been put in perspective, several aspects become evident. For example, almost invariably educational output has been postulated to bear a linear relationship to educational inputs. This hypothesis implies that each unit of input makes the same contribution of service irrespective of the level of utilisation (constant marginal product) and that there is no interaction among the various inputs (additive effects). Although in the absence of a conclusive theory of learning the appropriateness of this assumption has often been accepted unchallenged, it should be pointed out that intuition and the scanty evidence available provide little justification for its support. Students' performance, for example, can be expected to be influenced by student attitudes toward learning and these in turn may be affected by the quality of the teaching staff; similarly, common observation suggests that increased resource use generally leads to a declining marginal product.

What often lures researchers into adopting a linear model of analysis is the computational difficulty usually encountered in the estimation of non-linear relationships. In some cases, however, the advantages associated with linearity can be obtained from alternative specification of non-linear models (for example, a Cobb-Douglas production function is linear in its logarithms), and in such circumstances their use may be preferable as the likelihood of specification bias in the results will be reduced. Although some experimentation in this direction has been made with satisfactory results (Hanushek, 1969), more widespread application has not eventuated.

Apart from the form of the mathematical relationship between outputs and inputs, another common characteristic of research studies in this field is the concentration of the analysis on a range of variables, the relevance and theoretical justification of which is open to question. Looking initially at educational output, empirical investigations in the past have employed a variety of single measures such as the number of degrees annually awarded, credit hours, the present value of life-long earnings and so on. The majority have relied by far, however, on measures of standardised achievement tests in verbal ability, mathematical proficiency and other similar indicators of academic performance.

Such proxies of output facilitate the application of quantative methods to our research, but it must be recognised that they help to create a very partial and often misleading impression about the role of educational institutions in our society. To avoid the pitfalls resulting from this approach, it is essential that our research takes explicit account of the following considerations:

1. that educational institutions, from the primary through to the tertiary levels, are multi-product entities striving to achieve multiple rather than unitary objectives. Tertiary education, for example, must be seen as providing not only the necessary vocational skills to augment the graduates' income earning power

(a possible indicator of teaching output), but also as helping to develop social and political norms and values which benefit society at large (externalities and consumption benefits). Admittedly some of the objectives in question may be ambiguous and not strictly measurable in quantitative terms. These problems, however, do not appear to be insurmountable, especially if the results are derived on the basis of several assumptions.

2. that in addition to the previous products of the educational system, universities (and, to a lesser degree, C.A.E.s) produce an additional kind of output, research. Due to its elusiveness, this aspect of educational output is almost always omitted from studies of educational production and productivity but, as with the externalities and consumption effects previously mentioned, its exclusion tends to understate the societal contribution of these institutions. It has sometimes been suggested that a measure of the research output might be obtained by taking count of the books and articles published during a given period or by equating research output with the value of inputs necessary to produce it. The national accounting approach identifying outputs with inputs is clearly inadequate and inappropriate when the same unit of input contributes to the production of more than one output or when productivity is not constant. The publications method could produce more satisfactory results, particularly if different weights were assigned to the various writings. It should be noted that, in theory, best estimates of research output would be derived by using "shadow" prices to value the benefits expected to accrue to society as a result of a given research programme. Lack of appropriate data, however,

generally prohibits the application of this approach.

3. that measures of educational inputs in the production process must represent the portion of service potential consumed in the generation of educational output. This normally will necessitate the adoption of a flow rather than a stock method of inputs measurement. A related point refers to the treatment of time spent by students to attend courses as a productive factor. Despite the widespread acceptance that students' time is not a free good, there is still some tendency to exclude this input from models of educational production and productivity. The result can be expected to lead to specification errors in the analysis and bias in the findings.

Finally, some mention must be made of the aggregation procedure that input measures have to undergo prior to being used for analytical purposes. The process of replacing individual variables with aggregates in economic theory is subject to specified requirements that must be followed for optimum results. These requirements, however, are often unattainable in education (e.g. lack of appropriate market prices for certain inputs and outputs). Moreover the high levels of aggregation generally adopted tend to reduce the meaningfulness of the underlying variables. For empirical investigations, both aspects represent undesirable situations but the problem has by and large been ignored in educational research. As a consequence, the result is likely to be what Bowles termed "the frequent use of .... spurious factors of production" (1968: 36).

Variation among studies in educational production research may be observed not only with respect to the variables representing the educational inputs or outputs but also in connection with the analytical techniques employed to derive empirical estimates of the production parameters. The method most frequently encountered in the literature is multiple regression analysis (e.g. simple least-squares, two-stage least-squares and so on) but alternative techniques such as variance decomposition may also be found.

As it is known, multiple regression analysis aims at explaining variation in the dependent variable (educational output(s)) by reference to the changes in the explanatory independent variables (educational inputs). The relative significance of each independent variable is represented by the partial regression coefficients, and a significant portion of our analytical operations is concerned with the use of existing data to obtain empirical values of these coefficients. Least squares techniques will, under certain conditions,enable the derivation of "unbiased", "consistent" and "efficient" regression coefficient estimates, but whether the requirements can be expected to hold in the tertiary education environment is a rather contentious issue.

In earlier research these conditions were achieved, partially at least, by assuming that educational administrators knew little about the production process and various political and legal constraints prevented them from maximising resource use (Bowles, 1968: 16). But the rejection of an optimising behaviour for administrators begs a question very important for empirical analysis of educational production, namely, what do educational administrators seek to maximise? Reference to modern microeconomic theory provides us with some working hypotheses for investigation, but further research is needed to arrive at a more appropriate behavioural model. Theories of managerial behaviour developed in recent years suggest that a firm's management seeks to maximise its utility subject to a minimum profit constraint. This utility includes goals such as the maximisation of sales, of product demand and capital supply and, finally, of personal prestige, earnings, security and status. To the extent that some common ground may be found between the basic objectives and functions of the two groups, a plausible analogy could be drawn between the goals of firms' managers and those of educational administrators. The result might be called a theory of educational managerialism and it could find practical application in analytical models of educational production.

The statistical method of variance decomposition was used by Coleman et al (1966) in testing the significance of the variables in the E.E.O.R. study. Briefly, this procedure seeks to assess the importance of the explanatory variables in the model by reference to the contribution that each one makes to the variance of the dependent variable. It must be noted, however, that the results of this procedure are heavily dependent upon the ordering of the variables in the model, so that the introduction of a certain variable first will result in assigning both the unique and the joint component of the explained variance to that variable. On these grounds, it has been suggested that the high significance of family background and small effectiveness of school services reported by Coleman et al could be attributed to this characteristic of the method since the family background factors were entered consistently first in the analysis (Hanushek & Kain, 1972).

So far the discussion has centered mainly around the factors affecting the quality of school effectiveness and educational production models without direct reference to the theoretical basis of attempts to measure the productive efficiency of tertiary education institutions or that of the system as a whole.

Turning to this issue, while there is no doubt that measurement of productive performance can make a very useful contribution to educational policy by facilitating educational planning and efficient resource utilisation at either the institutional or the national level, there seems to be considerable uncertainty whether the productivity-ratio investigations carried out in the past are capable of providing the appropriate information. Critics of such research, for example, have pointed out with some reason that the lack of a market for educational products and the possibility of quality changes in educational inputs and outputs over time, make the analysis hazardous and render educational productivity a concept of considerable ambiguity (e.g. Bowen & Douglass, 1971; Johnson, 1965).

A productivity measurement approach which does not present some of the above problems has been developed by Farrell (1957) and consideration of its prospects of application in tertiary education appears to be a worthy task. Essentially the method involves the distinction between and measurement of an entity's technical efficiency (representing the success in producing maximum output from a given set of inputs) and its price efficiency (representing the success in best combining the productive factors given their prices), and it arrives at a measure of overall efficiency by taking the product of the two categories. The major difficulty with the analytical application of this approach is the presupposed knowledge of the production function, and as the foregoing discussion has suggested this information is scarcely available, at least in the Australian tertiary education scene. Furthermore, the method is preoccupied with allocative aspects of efficiency and it takes no account of other, perhaps more important, problems associated with human motivation such as "X-inefficiency" (Liebenstein, 1966).

SOME IMPLICATIONS FOR POLICY

Few will deny that in recent years tertiary education in Australia has been the subject of considerable political "bashing" and this may be observed in both the attitude of the public media and in a variety of government decisions, such as the curtailment of new educational initiatives, the abolition of triennial funding and, more recently, the enquiry into study leave provisions for academic staff. Nonetheless, education is a "public good" (in the economic sense), and consequently the decisions concerning the quantity and the quality in which it is to be made available to citizens must be made in the political arena.

The concern of this section is not to debate the justification of recent publicity and government actions, but rather to bring together the major implications of the foregoing discussion so that educational policy - the outcome of the political decision making - can be designed to serve better the needs of our society whilst at the same time making more efficient use of the nation's resources.

A prerequisite for any informed and balanced educational policy is the knowledge of the structural relationships underlying the educational process. Although some pioneering, but nonetheless elementary work has been carried out in the areas of primary and secondary education, the field of tertiary education still remains essentially untouched. This is a conclusion of considerable importance, since the nature and relative significance of productive factors in, say, primary education may vary considerably from those in tertiary education and, consequently, the unqualified application of the tentative empirical results accumulated in that area may result in the development of policy strategies which are not only irrelevant but harmful to tertiary education.

With the above qualification in mind, we may ponder over some of the existing findings. Evidence seems to suggest that the importance attached to some of the educational inputs sacrosanct in conventional wisdom (as well as in the minds of some administrators and academics) is not always justified. An apparent example of these is small class size, at least within a certain range. There is sufficient reason to believe that the sizeable expenditure usually associated with the teaching of small classes does not enhance student performance to an extent sufficient to justify the premium paid. If this is true, then universities and C.A.E.s need to rethink their teaching methods in order to reduce their costs and/or to make more efficient use of the financial resources available.

A related issue concerns technological innovation in teaching techniques and methods. If there is a declining trend in the productivity of the tertiary education sector and unfavourable comparisons with the productive efficiency of other service industries are in order, the cause might to some extent be found in the obvious reluctance of tertiary education institutions to adapt their teaching methods to the rapidly changing technological environment. This is not to imply that personal contact in teaching should be relinquished overnight in favour of, say, programmed instruction, or that in some cases it should be replaced at all. What it calls for, however, is an evaluation of comparative costs and performance at the institutional level in an effort to ascertain how the quality of education offered could be maintained while minimising the associated cost of resource commitments. Admittedly the tenure in employment of academic staff in universities and C.A.E.s makes the critical look and soul-searching necessary for such an approach difficult. Appropriate incentives and staff redeployment policies determined at the national level, however, could ameliorate its prospects considerably.

A second major implication of existing research is that there is a fair amount of confusion and uncertainty as to the functions of educational institutions in society and how we could best measure their services and contribution for analytical purposes. Indicators of tertiary education output such as annual number of degrees awarded, credit hours and so on clearly capture only a fraction of the services performed by universities and C.A.E.s, and consequently the development of more sophisticated, relevant and reliable yardsticks of their outputs are an urgent task for educational researchers. The question arises whether existing indicators could be used in the formulation of educational policy aimed at achieving wider social objectives such as equal educational opportunity for women and ethnic or racial minority groups, more equal distribution of incomes, reduction of structural unemployment and the like. Research such as the Coleman et al (1966) and Jencks (1972) studies suggest that the effectiveness of educational institutions (schools) as equalising agencies is limited. These results, however, have emerged from a very narrow interpretation of the educational system's contribution. Hence the inclusion of educational policy in a package of social policies requires that better methods of measuring educational results be developed.

The final consideration here relates to recent attempts in several Australian States to rationalise the production and distribution of educational services by reducing the number of institutions available in the "industry". As a policy instrument, the resulting mergers have considerable rationale in that they may help with the economic viability of institutions and increase academic diversity in a time of declining student demand. However, in view of the likelihood that a number of the present adversities facing tertiary education are expected to persist only in the short or medium term (e.g. downturn in economic activity, decline in births, cutback in migrant intakes, to mention a few), there is a danger that by pursuing an indiscriminate policy of mergers we may gain sight of individual trees but lose sight of the forest as a whole. To put it in a different way, we could be allowing short term considerations to overshadow long term ones. Little is known from educational research about the behaviour of large institutions, but some of the available results suggest that technological innovation and adaption as well as responsiveness to community demands decrease as the size of educational institutions increases. Such findings are consistent with economic theory of monopolistic and oligopolistic behaviour. It would appear, therefore, that substantially more research is required into the long term effects of currently proposed institutional mergers prior to effecting educational policies to bring them into being.

This paper has sought to provide appreciation of some of the major problems and areas of deficiency encountered in educational economic production and productivity research. Expansion in our present state of knowledge appears to be essential for effective educational policies and efficient resource allocation.

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A PRACTICAL MODEL FOR ACCOUNTABILITY IN HIGHER EDUCATION - THE DDIAE EXPERIENCE

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L.J. McNulty

INTRODUCTION

Post-secondary education in Australia is in a state of transition and uncertainty. Investigations at the State and Federal level into the operations of this industry emerge with monotonous frequency. Yet such investigations rarely result in qualitative improvements in the educational system which satisfy the future educational needs of our society. Rather, they are concerned with the clarification of the bureaucratic structures set up to coordinate and control an ever-widening range of institutions.

Three basic factors have given impetus to such investigations. These factors are: anticipated reduction in the rate of growth in demand for higher education brought about by demographic and economic pressures; the increasing costs associated with operating post-secondary institutions; and the changing political and economic climate within which such institutions operate. The more general political climate is also important. Events in Queensland recently, where there has been direct interference from politicians, supported by groups of concerned citizens, into the curriculum of primary and secondary schools, may eventually threaten post-secondary institutions, particularly if they do not enjoy the confidence of the public.

As a result of these investigations, and because of the stated desire of the Federal Government to reduce the real level of public expenditure, the growth of the post-secondary education sector has been restrained. Such restraints have occurred at a time when sectors of the community are critical of the products and processes employed by post-secondary institutions and are demanding change. Therein lies the dilemma. Change within post-secondary institutions is difficult in an environment where such institutions are faced with heavy fixed financial commitments, a decline in the real level of resources and government restrictions on their ability to develop new programmes and delivery systems more suited to changing student and societal needs.

In his 1972 Annual Report, the President of Harvard University commented on this situation when he said: "Funding an institution that cannot articulate its purpose is forever vulnerable to the outside world on which it ultimately relies for its existence. In the long run, the support given to colleges must depend upon cogent reasons rather than conditions of convenience. Colleges can supply such reasons only if they are able to provide a compelling statement of what they are attempting to achieve for their students," (Bok, 1973).

The formulation of such objectives in many instances runs counter to the attitudes of existing staff. The second Newman report has highlighted one of the major impediments to the development of proper planning models and consequently the attainment of public confidence when it suggested, ".. there is too much evidence that given the chance institutions and their faculties will be inner directed to teaching what they want to teach, lecturing in the style they find comfortable and concentrating on students they find compatible," (U.S. Department of Health, Education & Welfare, 1971).

In order to counter the imposition of objectives and assessment programmes by centralised authorities, in order to adapt to ancitipated future changes in the level and type of student demand, in order to demonstrate cognisance of public needs and requirements, and in order to ensure as efficient and effective operation as possible, the Darling Downs Institute of Advanced Education has completed an evaluation of its activities. The model employed in this evaluation is the major focus of this paper, which describes the basic components of the model, the procedures used in its application, problems and benefits associated with its implementation, and a review of the implications of the approval.

THE SYSTEMATIC MANAGEMENT MODEL FOR ORGANISATIONAL REVIEW AND DEVELOPMENT

The Systematic Management Model for Organisational Review and Development was developed for use by administrators of service-based organisations in the preparation of long-range plans for organisational change. The model is based on general systems theory concepts.

All organisations, including post-secondary institutions, are formed to carry out a task and, hence, they can be described as systems. Colleges and universities, as systems, bring together resources (students, teachers, money, facilities) through a predetermined process (curriculum, extra-curricular activities, special programmes) and produce results (learned graduates, the identification of new knowledge or local, State and national service).

These general systems theory concepts provide the basis upon which the Systematic Management Model for Organisational Review and Development was designed and employed. While the model is used for the evaluation of institutional performance, and hence as an accountability measure, the evaluation stage is identified as a step in the overall design to bring about desired change in the organisation. Therefore, application of the model in an accountability programme results not only in the definition of problem areas and problems, but follows the evaluation process through to the identification of a plan for correcting such problems. Diagram 1 illustrates the various stages in this sequence. The specific purpose of these stages, and how they were implemented at the DDIAE, are described in the next section of this paper.

THE SYSTEMATIC MANAGEMENT MODEL FOR ORGANISATIONAL REVIEW AND DEVELOPMENT IN ACTION

Activities for each stage of the review were directed by a central committee (the Organisational Review Committee) consisting of the Chairman of each School, the Registrar, the Director and other senior administrators. The basic functions of this Organisational Review Committee were to:

(a) plan and coordinate activities for each stage of the review;

(b) provide avenues for input from various Schools into the review process;

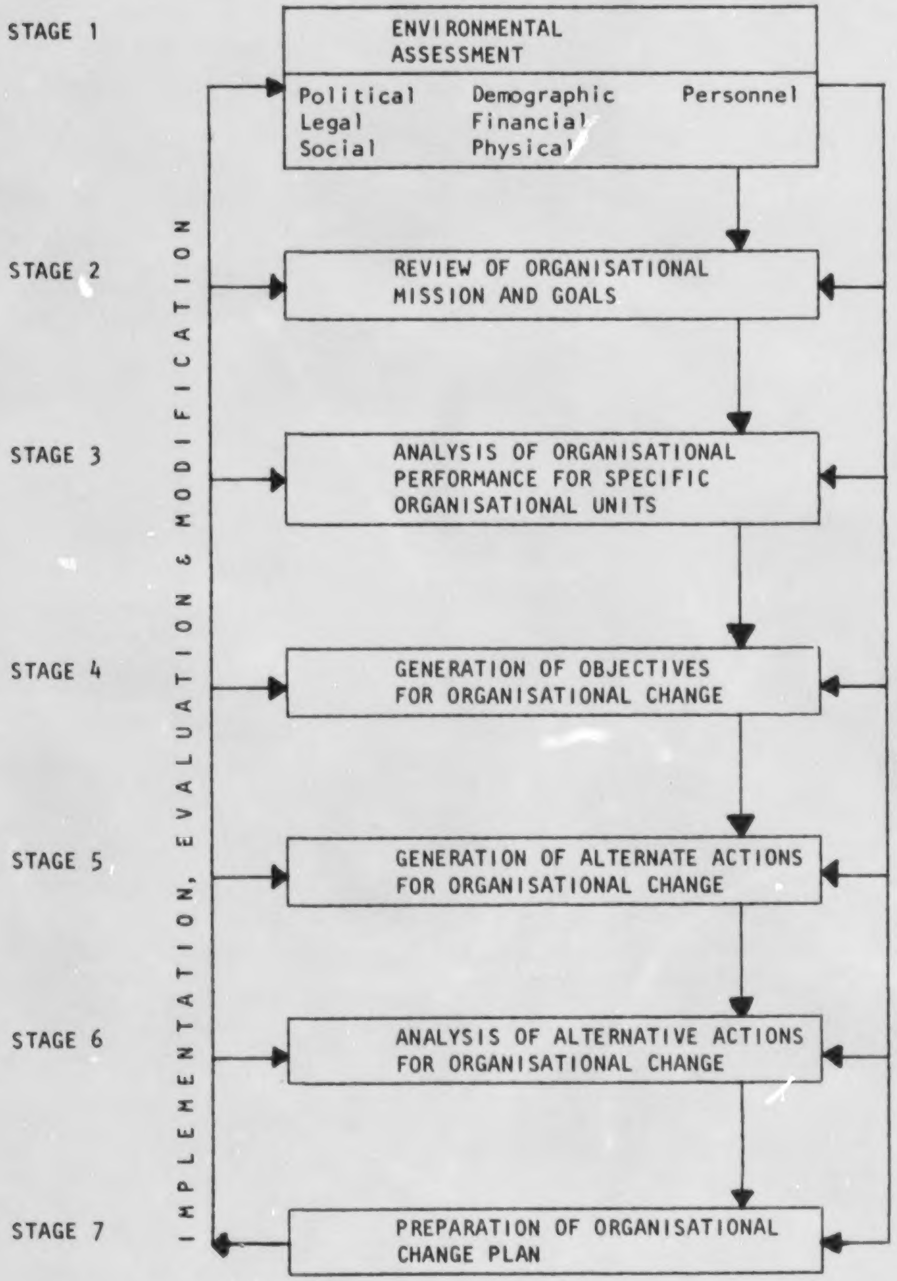
(c) provide a communication link from Central Administration to staff through the Schools concerning the organisational review process and progress.

STAGE 1 - ENVIRONMENTAL ASSESSMENT

The intention of this stage was to develop information concerning the political, legal, financial, personnel, social and other factors which affect the operation of the organisation and its review and development. Any organisational changes to be implemented must be compatible with the environment; therefore, such information is the background upon which the review and development is conducted.

DIAGRAM 1

SYSTEMATIC MANAGEMENT MODEL FOR ORGANISATIONAL REVIEW & DEVELOPMENT


STAGE 1
ENVIRONMENTAL ASSESSMENT
Political
Legal
Social
Demographic
Financial
Physical
Personnel
STAGE 2
REVIEW OF ORGANISATIONAL MISSION AND GOALS
STAGE 3
ANALYSIS OF ORGANISATIONAL PERFORMANCE FOR SPECIFIC ORGANISATIONAL UNITS
STAGE 4
GENERATION OF OBJECTIVES FOR ORGANISATIONAL CHANGE
STAGE 5
GENERATION OF ALTERNATE ACTIONS FOR ORGANISATIONAL CHANGE
STAGE 6
ANALYSIS OF ALTERNATIVE ACTIONS FOR ORGANISATIONAL CHANGE
STAGE 7
PREPARATION OF ORGANISATIONAL CHANGE PLAN
IMPLEMENTATION, EVALUATION & MODIFICATION

To carry out the environmental study, various members of the Organisational Review Committee were asked to assemble information concerning the general and relevant environment. Specific areas for which information was assembled were identified using the Nominal Group Technique (NGT) with Review Committee members. General environmental information was assembled for three areas: the political basis of education in Australia; the aims of education in Australia; and the future of tertiary education in Australia.

Relevant environmental information was assembled for the following: regional demographic and economic characteristics; history of the Darling Downs Institute of Advanced Education; the community which the Institute serves; physical characteristics; staff and student characteristics. Information collected in these areas was assembled into the document "Some Aspects of the Environment". This paper, supplemented by other Institute documents - such as basic DDIAE statistics, staff, student and community surveys and other official Institute documents - comprised the environmental material. Information contained in these documents was utilised throughout the remaining review process.

STAGE 2 - REVIEW OF DDIAE MISSION AND OBJECTIVES

After much consultation and discussion regarding previous Institute mission and objective statements, the Organisational Review Committee prepared a revised statement and circulated it to staff for comment and the revised mission and objectives were then adopted for use during the review. However, the document is currently undergoing further study as a result of organisational review activities.

STAGE 3 - SELF-ASSESSMENT OF INSTITUTIONAL PERFORMANCE

The major concern of this stage was to evaluate the degree to which the various organisational units within the organisation were performing. This evaluation was accomplished through a series of self-assessments. To facilitate objectivity, results of the self-studies were validated by a panel of appropriate persons external to the organisation.

This stage of the review was conducted in two distinct steps:
1. self-assessment of organisational units;
2. external validation of the self-assessment.

Self-assessment of the DDIAE began with each organisational unit conducting a thorough evaluation of its efficiency and effectiveness in relation to Institute objectives. The units undertaking self-assessment were academic Departments and Schools, the Director's Office, Council, Academic Board, the Director's Advisory Board and Central Administration. The evaluation of efficiency and effectiveness followed the basic events described below:

(a) A series of Critical Elements (those operational areas within the organisational unit which must function successfully in order for the unit to operate efficiently and effectively) were identified.

(b) A series of Ideal Statements (which describe the capabilities that each critical element must possess in order for the organisational unit to operate efficiently and effectively) were determined. Two examples of ideal statements for the Critical Element "Staffing" were: "Departmental staff will have sufficient depth and breadth to provide the range of courses necessary to adequately enable graduates to obtain employment"; or "Departmental staff shall possess sufficient expertise in curriculum preparation to adequately prepare External Studies units".

(c) A rating of how close to the ideal staff perceived the current status of the organisational unit was prepared. For those ideal statements receiving the lowest rating, specific barriers to the attainment of the ideal were identified by staff and stated in terms of clearly defined problems, with supporting documentation.

(d) Each organisational unit placed its problem statements in order of priority and a range of Alternative Actions was developed for as many of the higher priority problems as could be conveniently handled.

Finally, staff in each unit conducted an analysis of each corrective action to determine the most viable corrective action in terms of:

(i) the primary impact of the action on the problem;

(ii) the secondary impact of the action in other areas;

(iii) the estimated cost effectiveness of each action;

(iv) the personnel involved in implementing the action;

(v) the time requirements associated with implementing the action.

When all organisational units had completed the self-assessment, the validation exercise commenced. The validation for each unit was conducted by separate teams for each School, Central Administration and the Resource Materials Centre. Membership in each team was determined by the Organisational Review Committee from a list of discipline experts, management experts, students, staff and graduates supplied by staff from each organisational unit. The

Validation Teams were charged with the task of assessing whether the organisational unit utilised adequate procedures in its self-assessment, arrived at accurate problem statements and proposed viable corrective action statements.

The work of the Validation Teams was coordinated and directed by an "Expert Core" selected for their expertise and prominence in management and higher education. The Expert Core membership was determined by the Organisational Review Committee from a list of individuals submitted by staff. The Expert Core was charged with providing continuity, objectivity and freedom of investigation for the Validation Teams. In addition, they were asked to analyse the self-assessments from an overall, Institute-wide perspective.

The validation exercise was accomplished over a period of fourteen days with validation visits ranging from three to five days for each of the organisational units. (The validation was conducted in a condensed time frame with a highly structured format, designed to focus an intense concentration by both team members and the Institute community in their deliberations. In this manner, the exercise was kept focussed primarily on validating the results of the self-assessments). Upon completion of the exercise, each Validation Team presented to the Expert Core and the Institute, at an open hearing, a verbal and written Exit Report, detailing the team's findings. Finally, the Expert Core reported to the Institute community, summarising the organisational unit validation reports with implications to the Institute as a whole.

STAGE 4 - GENERATION OF REVIEW OBJECTIVES

This stage of the Review was conducted in two steps. The first was to identify the major problems which were perceived to be most significant in terms of successful Institute performance. Once these problems were identified, specific Organisational Review Objectives were prepared to guide the development of Institute structures for increasing institutional efficiency and effectiveness. Perceived barriers to optimum Institute performance were identified through a consideration of information from four basic sources: the Environmental Assessment in Stage 1, the results of self-assessments in Stage 3, the Validation Team reports in Stage 3, and individual ideas and impressions communicated to the Organisational Review Committee members by interested staff.

Using the above data, each Review Committee member identified what he considered to be the important problems and causes defined during the self-studies and evaluations previously conducted. These problems and causes were analysed and classified using a grid which identified a problem/cause as having its source in the

(a) Organisational Structure of the Institute;

(b) Management Leadership of the Institute;

(c) Policies and Procedures of the Institute.

Problems/Causes were further classified as to whether the major focus was

(a) at the Central Administration level;

(b) at the School/Departmental level;

(c) Institute-wide in nature.

Using these six areas, a 3 x 3-cell grid was prepared and problems/causes were classified into one or more of the nine grid cells.

Since the Organisational Review Committee was an Institute-wide body constituted to analyse current organisational structures, it dealt only with the items which appeared in the Institute/Organisational Structure cell of the grid. All items which appeared in the Policy/Procedures cell were referred to another working group: for example, a group constituted to review and further develop the Institute Policy and Procedures Manual. Those items classified in the Management/Leadership cells were designated for further use in management training programmes. Units within Schools/Departments and Central Administration were given the results of the grid exercise relevant to their specific areas for consideration and action.

The second step of this stage of the model was completed with the actual preparation of specific Review Objectives for six Review Objective Areas. These areas were determined from analysis of the nature of the problems previously classified in the Organisational/Structure area of the grid. (Adequate Information Flow was initially identified as a seventh area; however, objectives for this area were subsumed into the other six areas.) The six areas were:

(a) Effective and Efficient Utilisation of Resources for Academic Programmes;

(b) Effective Operation of Central Administration;

(c) Effective School/Department Management and Performance;

(d) Effective Functioning of Institute Boards (and Committees);

(e) Effective Satisfaction of Student Needs;

(f) Satisfactory Staff Morale.

Using the problems and causes previously identified, twenty-eight individual Review Objectives were generated for each of the six Objective Areas. These objectives were stated in terms of a Desired Outcome for the Review Objective Area, relevant evaluative criteria which could be used to measure achievement of each objective and the procedures to be followed in measuring performance against the evaluative criteria.

Since minimal constraints were applied to the submissions, a brief analysis of each submission in terms of its feasibility for implementation was conducted. A submission was judged feasible if, without judging the merits of the submission as a solution, it was decided that the alternative could be implemented in terms of the constraints defined below:

the Alternative related to:

1. a change in the organisational structure of the Institute;
2. a specific objective in the Review Objective area;

the Alternative could be implemented within the constraints imposed by:

3. current Federal and State legislation;
4. facilities of the Institute;
5. financial capabilities of the Institute;
6. manpower which could be made available to the Institute.

Using the feasible staff submissions, each Organisational Review Committee member prepared a comprehensive organisation structure which he perceived would best meet the Review Objectives. These structures included the following:

(a) the principles and assumptions upon which the proposed structure was based;

(b) an organisational chart depicting the structure;

(c) the supporting board/committee structures necessary to implement the proposed new structure;

(d) the leadership and management patterns necessary to implement the structure;

(e) positive impacts of the structure upon the Institute in terms of Review Objectives and the individual staff/ student submissions.

STAGE 5 - GENERATION OF ALTERNATIVE ACTIONS

In implementing this stage of the model, the Review Committee attempted to maximise input from staff. To achieve this:

(a) An open hearing was held for all interested staff/ students to explain Review progress to date and answer questions regarding submissions.

(b) The problem statements and desired outcomes, developed in Stage 4, were distributed to all Institute staff, along with instructions for making submissions to the Review Committee of possible structural changes which would meet a specific stated Review Objective. Copies of the problem statements and Review Objectives were also lodged in organisational units within the Institute.

(c) During the two weeks following the open hearing, Review Committee members visited all School/Administrative units to meet staff on a one-to-one basis for consultation regarding individual submissions.

(d) Student input was solicited through the Student Union and advertised in the student newspaper and local press. In addition, an open table was manned by Organisational Review Committee members in the refectory to obtain student input and answer questions.

The overall open input stage lasted approximately three weeks.

During this time, over 200 individual and group submissions were received.

The analysis of alternatives is designed to ensure that the following needs are met:

(a) The organisational structure facilitates the achievement of stated Review Objectives.

(b) The organisational structure reflects the collective wisdom of staff and students.

(c) The organisational structure is legal.

(d) The organisational structure can be implemented in terms of financial constraints.

(e) The organisational structure provides the Institute with the ability to meet future and changing needs of the Institute and its activities.

(f) The organisational structure provides an efficient and effective framework within which the Institute will carry out its mission.

The analysis phase was conducted at the Institute in five steps. They were: Review Committee analysis; fiscal and legal analysis; independent analysis; executive analysis; College Council analysis. These steps are outlined below.

The Committee gave particular attention to whether the proposed alternative met the stated Review Objectives and adequately reflected the inputs made by various staff/ students. The Committee also conducted the final analysis of the proposed change prior to its submission to the Director for Executive analysis.

The one proposed alternative which the Review Committee judged most appropriate for the Institute was analysed in terms of the financial cost associated with its implementation. It was also analysed in relation to the legal constraints affecting the Institute and its operation.

The next step in the analysis was designed to receive input from a variety of internal and external sources. The purpose of this input was to obtain indications of possible negative impacts of the proposed alternative. Internal analysis teams were constituted from the following: non-academic staff; lecturers; senior lecturers; principal lecturers; technicians, academic support staff; and students. External analysis was sought from the Expert Core, the School Visitation teams and several senior administrators from other institutions. Following the internal team analysis and external analysis, the entire Institute community received the opportunity to comment on the proposed structure through Institute open hearings and group discussions between interested staff and students and the Organisational Review Committee.

The Director's analysis focused on the utility of the proposed structure in terms of supporting evidence, his perceptions, as chief executive, of its impact on the future of the Institute and the policy and directions given to him by Council.

Council conducted their analysis using normal Council procedures.

STAGE 7 - PREPARATION OF ACTION CHANGE PLAN

This plan included such things as specific individuals responsible for administration of various aspects of the change, time constraints and major target dates for the specific events enacted during the change, the resources utilised in implementing the change, alternative decisions for action necessary to deal with changed environmental factors, specific methods for evaluation of progress towards stated objectives and procedures for modification of the change as ongoing evaluation occurs.

PROBLEMS ENCOUNTERED WITH THE REVIEW AT THE DDIAE

In any undertaking of such magnitude and complexity, an organisation will naturally encounter a variety of problems. Some of the problems described in this section occurred as a result of a lack of clearly defined operational procedures to guide the Review Committee, the lack of understanding of staff and students concerning the focus and thrust of the exercise, and because certain aspects of the Institute in need of change were themselves barriers to progress of the Review. In considering these problems, it must be pointed out that participation in the exercise by the Review Committee in particular, and by staff in general, was a learning experience in organisational development. The major problems are classified below:

USE OF STAFF TIME

In order to ensure that staff had ample opportunity to input to the evaluation in each of the academic and non-academic areas, most organisational units conducted a series of meetings. Unfortunately, early in the exercise, many of these meetings were non-structured and resulted in an over-use of staff time with few positive results. A clearer purpose for such meetings prior to their conduct, and more clearly defined results as required by the Review Committee from those meetings, could have enhanced their efficiency. Insufficient effort was expended to communicate to staff the real impact of the Review exercise. It was also unfortunate that several units failed to involve staff enough. This lack of involvement was particularly true for the non-academic staff in the self-assessment stage.

COLLECTION OF ENVIRONMENTAL DATA

The environmental assessment took more time than necessary. The determination of areas for the collection of environmental data and the designation of individuals to conduct such data collection was carried out in a fairly efficient manner. However, follow-through in data collection efforts and coordination of the data into a comprehensive document occurred too slowly. Part of the problem associated with this was the insufficient staff assigned to the exercise.

INTERNAL AND EXTERNAL SURVEYS

The Review Committee attempted to collect information with regard to student attitudes about the Institute, staff attitudes concerning the Institute and their positions, community impressions of the Institute and information regarding Institute graduates. To obtain such information, a series of survey instruments was prepared. With the exception of the graduate survey, procedures and instrumentation prepared for this purpose were not generally consistent with social science research principles, particularly in that clear purposes for questions were not identified in the development of the instrumentation, nor were adequate controls applied. As a result, several problems arose:

(a) The data collected was extremely difficult to analyse and put into usable fashion.

(b) Some of the questions were ambiguous; therefore, response to some surveys was quite low.

(c) Necessary feedback to staff regarding their responses to the surveys was unduly delayed.

(d) In some cases, the data derived from the surveys was not substantiated by subsequent investigations, thus highlighting the need for extreme care in developing such instruments.

It should be pointed out that the Review Committee in their deliberations recognised these weaknesses and did not attempt to over-utilise the results of these surveys. Responses were used primarily to pinpoint possible areas for further study.

COMMUNICATION NETWORKS

The terms of reference and proposed activities of the Review Committee were indicated to all staff through a document distributed throughout the College. However, the only formal communication network established to (a) obtain input from staff periodically, and (b) submit to staff progress of the Review, was the Organisational Review Committee itself, which did not adequately fulfil this function. Consequently, as the Review progressed, a variety of rumours developed concerning the direction the Review was taking and the nature of the activities undertaken.

VALIDATION TEAMS

While the validation exercise was an overwhelming success in terms of the reports received and the work conducted by the validation teams, these teams were not picked early enough in the Review exercise. It was only when the teams were selected that one or two of the units of the Institute began to work in earnest on self-analysis. Had these teams been selected much earlier in the exercise, some staff would have come to an earlier acceptance of the reality of the exercise and the whole process could have been done more efficiently and perhaps completed sooner.

PROBLEM IDENTIFICATION SKILLS

A variety of problems arose because few college and university staff are trained in the skill of organisational problem identification and the related skills of assessment and evaluation. At the DDIAE, operational problems occurred within various units in terms of definition of problems, description of possible solutions and ways to analyse the importance of the solutions. It is apparent that early in the exercise some inservice training in these areas would have been most beneficial.

SUMMARY

The problems stated above were seen to be the major ones encountered by the Review Committee. It should be pointed out that these problems are identified so that anyone else attempting to conduct an internal assessment of performance may be cognisant of them and could develop mechanisms for their avoidance. In spite of the problems, however, it was felt by the Review Committee that the overall exercise was a success. Furthermore, as an ongoing review of institutional performance is developed, it will be beneficial for the Review Committee to build mechanisms to avoid such problems in the future.

GENERAL BENEFITS OF THE REVIEW

There are many benefits which accrued from the Review, both to the Schools and the Institute as a whole. Some benefits occurred directly from the Review exercise, others occured as by-products. Whereas the Organisational Review Committee focussed on an Institute-wide identification of problems and solutions, Schools had conducted their own internal self-assessments and many problems were identified and dealt with by the individual Schools and Departments as internal issues. Two of the Schools are now engaged in a reorganisation of their committee and course structures which grew out of the self-analysis process. Three basic benefits which the Institute derived from the overall exercise are listed below.

The Institute now has a more clearly defined Mission statement and Institute-wide Objectives and provision for periodic updating of such documents. With these objectives, the Institute should be in a much better position to evaluate its performance in the future. In addition, these objective statements will become the basis upon which the various operational units within the Institute can develop their own desired outcomes and evaluative criteria. The net result is that in the future, the DDIAE should be able to more clearly demonstrate the evaluation of its performance.

As a result of the Review, many perceptions of Institute problems commonly held by staff/students were identified. Upon further analysis, some of these so-called problems were recognised as not real issues in need of institutional attention. Furthermore, some organisation units were able to defuse issues which had arisen as a result of misinformation or misunderstood information.

Upon completion of the review, the Institute should be organised in a structure designed to facilitate efficient and effective operation of a college with a staff of 400 and a variety of programmes. During the early growth of the Institute, much of the decision-making process was of necessity centred in the Director's Office and Central Administration. Such a process is no longer judged appropriate for a college of the size and complexity of the DDIAE. Through the organisational structure change, most of the daily decision-making should be devolved to the various academic centres of the Institute, thus bringing the operative decision-making process of the Institute closer to those involved in the implementation of such decisions. Senior administrators of the Institute should be able to devote time to long range planning of the Institute and gear its activities to the changing needs of the next decade.

RECOMMENDATIONS FOR THE PREPARATION AND IMPLEMENTATION OF ACCOUNTABILITY PROGRAMMES IN COLLEGES & UNIVERSITIES

The importance of these recommendations is that they demonstrate the experience of an organisation which applied the concepts of systematic organisational development under real-life circumstances. The following recommendations for conduct of institute self-assessment are based on observations of the Review as it occurred at the DDIAE. The recommendations are presented so that individuals at other institutions wishing to undertake exercises similar to that at the DDIAE may benefit from its experience. These recommendations are:

In order for any evaluation exercise to be successful, it is imperative that the senior administrators and the head of the institution are actively involved in the process. Such individuals can best facilitate other staff involvement and commitment. However, they must be willing to devote a great deal of their time in guiding, promoting and implementing the evaluation exercise.

It is essential to sensitise and educate all staff and students concerning the evaluation process and communicate to them progress of the evaluation as it unfolds. Through such efforts, staff/students can more readily input to the review process and should have a higher degree of commitment once the evaluation has been completed.

It is important to identify early in the exercise a credible change agent. Obviously the nature of this change agent would vary from institution to institution. At the DDIAE several were used. They were the internal Organisational Review Committee, a staff member on the Director's establishment responsible for coordination of the exercise, and external validation teams. There could be a variety of other change agents. Organisational development literature describes this aspect of organisational evaluation and change in great detail.

It is essential that any change agent or review committee receive ample clerical support. Quite often, in order to react to changing situations during the review, turn-around time on production of information was quite short and required intensive work by more than one member of the clerical staff. In addition, the self-assessment of various organisational units placed an extreme burden on their non-academic staff at times.

The group coordinating the evaluation process must designate part of their weekly work routine for meetings and other activities. Such meetings must be held with accurate and complete recording of events. It is also recommended that set procedures governing the stages of any evaluation process be agreed upon by all members of the coordinating group prior to conduct of that stage. These procedures should include such things as specific activities to be undertaken, individuals responsible for the conduct of such activities, evaluative criteria and decision rules to be employed. Once agreed upon, such procedures should be strictly adhered to and only altered under agreement by the majority of the group.

Formal two-way communication lines should be established between staff/students and the unit conducting the evaluation exercise. In addition, ample checks should be employed by the coordinating group to determine if these communication lines are working. Provision should be made to communicate in writing to staff/students the results of any written submissions by them to the review committee. Indeed, all formal aspects of the organisational review or evaluation should be documented with nothing left to depend only on verbal communication.

A master plan for the entire conduct of the evaluation should be developed as a first step in the application of the model. This plan should detail target dates and various events which would occur during the evaluation process. Included in this plan would be procedures for the identification of outside experts to be brought in in relation to validation of the evaluation. These individuals should be identified early in the exercise in order to stimulate staff/student interest.

While it is essential that staff/students have the opportunity to input to all stages of the evaluation, it is not essential that they be actively involved in all stages of the review. One of the problems experienced at the DDIAE was poorly planned involvement of staff. Staff time can be better spent contributing to the process if they are given sufficient lead time to think about the type of information desired and then provided with sufficient opportunities to input such information. It is important, however, to involve staff in the problem identification, generation of solutions and consideration on the work on alternative solutions.

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EDUCATIONAL BROKERING: A NEW CONCEPT IN THE BUSINESS OF EDUCATION

I.McD. Mitchell

In the current Australian tertiary education context of mergers, amalgamations, takeovers and sharemarket 'raids', it is appropriate to reflect on the concept of 'educational brokering'. Some may content themselves simply with a practical exploration of the word's etymology, since it is based on the French "broquier - to tap a cask".

The National Centre for Educational Brokering celebrated its second birthday of publication with its Bulletin of December, 1977; and used the occasion to reflect on its experience and, in the context of the crowded U.S. educational scene, to explore its relationships with other educational services.

This paper presents a précis of that reflection and assessment and raises questions as to the relevance of the activity of brokering in the wake of the current Australian flurry of State Post-Secondary Education Enquiries.

BACKGROUND

The National Centre for Educational Brokering was established in Syracuse, New York, in 1976. It is a non-profit organisation to foster the growth of a new set of services to adults seeking more education or more job mobility. It was not intended to become "just another dreary national council" but a "broker's broker".

Who then are the brokers? The initial impetus for the N.C.E.B. grew from the experiences of Francis Macy and Donn Vickers, Director and Associate Director respectively of the

N.C.E.B. In their earlier roles in the Regional Learning Service, Syracuse, N.Y., they had shared in this local development project established in 1973 by the Policy Institute of the Syracuse University Research Corporation. While funding initially came from the Ford Foundation, today funding is also derived from the Department of Health, Education and Welfare, the State Education Department and the Carnegie Corporation.

The Regional Learning Service is also affiliated with the Central New York External Degree Consortium and the Elementary and Secondary Educational Council of C.N.Y. Its purpose was to act

> "as a link between learners and resources
> .....to enable potential students to:
>
> . make informed decisions about their career and educational goals;
>
> . develop individualised educational programmes using learning opportunities in the academy and in the community;
>
> . gain educational and occupational certification for their capabilities wherever and however required".
>
> (Beamish 1974, p. 9)

How the R.L.S. went about selecting and writing the job specifications for counsellors is the basis for a paper in itself. (see Mitchell, 1975, for brief comment). Let it suffice here to say that counsellors are not 'professional' in the academic sense of the word, but rather are a selection of peer/client-selected, part-time, short-term contract, multi-racial, local people with a variety of formal qualifications (cf. Thompson and Jensen, 1977).

This personnel structure was imperative, since the R.L.S. saw itself as not competing with education institutions but complementing them.

> "It does not replace them but aims to extend their reach and increase their responsiveness.....is closely connected to them all, yet independent of any single one; informed on resources yet neutral towards them; interested in students yet without interest in the choices they make". (Beamish, 1974, p. 9).

As the efficacy of the R.L.S. counselling became evident in the wider range of students they consulted so the need became apparent for access to a wider range of resources. Access to that wider range of resources was gained logically through similar 'R.L.S.' link centres. Other centres experiencing similar demands for resources information welcomed closer interaction. And so, N.C.E.B. was formed.

In its first issue of the Bulletin, N.C.E.B. stated:

> "Over the past few years educational policy has focused on extending education opportunities to those not adequately served by the present post-secondary system. In the gradual emergence of the "lifelong" or "recurrent" education scene, there have appeared a number of studies of what adult learners want and need and the problems they encounter as they resume - or begin - their educational pursuits. Chief among the needs of

> adults as they move into the post-secondary system are adequate counselling and support services. They are entering what is to them unfamiliar, even strange, territory ..... (Brokers) serve adults through information-giving, referral, counselling, assessment, and client advocacy". (N.C.E.B. Bulletin, I(1), p. 1).

An attitude reflected persistently by brokering staff is that which attempts to allow the student to control the independence/dependence dimension of interrelationships. On the lower extreme there are Dial-Access programmes (see Flinck, 1975; Meyer 1967; Jacobson and Hardin 1977) which allow the student, anonymously if he chooses, to dial in for information. He requests or simply dials for a pre-recorded cassette title to be played. In the lower half of the spectrum is the Regional Learning Service experience where student and counsellor make up to a three month contract to work together. After that the particular contract can only be extended under exceptional circumstances. I cannot give any illustrations at the other end of the spectrum where agencies foster or tolerate interminable dependence. This attitude which understands and accepts short-term dependence but which works toward long-term independence is commendable.

THE PRESENT SCENE

Since its formation the N.C.E.B. has focussed on:

(1) conceptual and role clarification exercises embracing organization, funding, descriptors, special services (e.g. the aging, unions, women), computer-based information, etc.

(2) the State scene - both organizations, information exchange and legislature.

(3) the National scene - particularly Federal legislation and para-Educational Acts and Projects dealing with Unemployment, Libraries, Information Services, etc.

The N.C.E.B. is not involved in the development of Learning Exchange Projects (see Melbourne Learning Exchange, reported in Lifelong Education Conditions, Needs, Resources, 2 Vols., Aust. Assn. for Adult Education, 1973 - 1974 for an Australian example, and Learnxs, Scarborough, for a Canadian example). Nor is it involved in various Community Service and Continuing Education programmes. Rather it needs to know of the existence of these programmes and their goals.

What is of concern to N.C.E.B. is the new development of Educational Information Centres. With over 200 services now cooperating through N.C.E.B. the Federal establishment of E.I.C.s raises the possibility of conflict of interests between the coordinating authorities. The E.I.C.s must provide information and referral services but are not obliged to provide guidance and counselling services nor remedial and tutorial services. The first of these was seen as a hallmark of N.C.E.B. centres. The dilemma in discriminating between information and counselling services is highlighted by Ironside and Jacobs (1977).

Furthermore, E.I.C.s can be constituted within institutions, thus threatening the neutrality factor long cherished by N.C.E.B. members. Thus a Federally-established service gives recognition to the immense worth of the N.C.E.B. network but, in trying to supplement it, modifies its rationale and has the power of the dollar to support its shift of stance. Again, something of the cooperative nature of N.C.E.B. is possibly lost through State agencies having the power to define 'reasonable access' and 'reasonable distance' within its State boundaries in establishing E.I.C.s. Thus N.C.E.B. may be left with a new task of gap plugging.

THE SPREAD OF BROKERING: A SUMMARY OF PARTICIPATION

Data compiled from an N.C.E.B. survey in December, 1977 has shown that:

1. There are 200 agencies listed as 'Educational and Career Information Services'.

2. All appear, from their self-descriptions, to be

    (a) providers of information, referral, advisory and advocacy services for adults;

    (b) impartial sources which do not serve the enrolment interests of particular institutions; and

    (c) programmes oriented to education and careers rather than job placement.

3. Programmes can be found in forty States.

4. New York and Wisconsin boast over forty programme sites each; nine States have between five and ten programmes; thirty States have between one and five.

5. Included in the Directory are forty-four non-profit independent agencies which are supported by diverse

federal, State and/or private funding. Eighteen of these are women's centres, designed specifically for women returning to school or to the labour market.

6. There are thirty-one inter-institutional arrangements, typically through three or more colleges and universities, some in conjunction with libraries and community agencies.

7. Eight colleges have grants from the U.S. Office of Education to run Educational Opportunity Centres which appear to be neutral in their referrals to a wide range of educational opportunities.

8. In terms of staff size, about half of the programmes range from one to four people, the other half typically have from five to twelve full-time personnel, or the equivalent in part-time staff.

9. A first year brokerage's client load might be 100-200 people; several of the established programmes have annual client counts of 2,000 to 5,000 and more.

10. Most of the programmes identified were founded from the early 1970's on; about forty programmes listed are in their first year of operation.

11. For all the differences in sponsorship, size and services, there is a common focus on clients in their communities, an emphasis on neutral but well informed assistance, and a focus on the bridges between education and work.

THE AUSTRALIAN SCENE

With moves to rationalisation, amalgamation and centralisation rampant in the Australian scene, is the time now opportune to establish a N.C.E.B. network here or has the opportunity gone? Should we be content with only a national level of activity or should we think internationally? Is rationalisation going to facilitate access or inhibit it? Will stringent economics and a pre-occupation with 'efficiency' override the peculiar disadvantages that many would-be learners suffer? Is the overall policy to generate more 'dirty blue' collars and fewer 'clean blue' and 'dirty or clean white' collars?

Within the 'disadvantages' sphere in Australia there has been progress made in developing national registers of external studies, adult and further education programmes. The organisers are aware that much more detailed work is needed, but will they receive encouragement to pursue their tasks?

Again, in Australia, with our focus on Federal funding in education, is there a place for non-institutionally-based brokering services? What work has been done to date has emanated from institution-based personnel since they were the only ones available to do it. But, in the process, counsellors have been open to the charge from students that institutional interests dominate their thinking and that counsellors are not client-centred enough. Indeed the charge from the institutions can often be more pointed than that: Why have not counsellors pressed for students (funds) for their host institutions?

The brokering service ideal is meant to cover all aspects of educational facility and must be seen to be 'open' to foster the trust relationship with potential students (Wrenn, 1973). Therefore its directory services must cover more than specialist needs as mentioned above. Conversely the tertiary admission centres developed in recent years cannot be seen as a panacea to student problems largely because they were established primarily to satisfy institutional needs; and they are committed to computer programmes and tight schedules of faculty acceptance meetings, to be judged as efficient. They epitomise institutional barriers, in the eyes of potential students.

For us to move into the educational brokering sphere requires some important shifts of stance.

1. The service must be seen unequivocally as client-centred; all discussion of the concept to date has been undertaken by institutional personnel. In particular, a warning could be sounded against the well-intentioned, all-things-to-all-men approach of the Technical and Further Education sector, which has already offered to run the service.

2. Someone has to accept responsibility for funding the project. In the short term this would have to come from, say, the Tertiary Education Commission. A three year 'seeding' fund is too short a term, because the first half of the period would be devoted purely to developmental tasks of internal coordination, winning the approval of institutions, and establishing rapport in the market-place. To have to devote attention to on-going funding for the end of the three year period is too premature. After 18 months establishing the structure the next 18 months could not be clouded by the potential disestablishment of the structure. Furthermore, staff have to be recruited and trained; and who of any calibre is likely to risk a tenured or superannuated post for a three year experiment? Again, secondment is not the solution, because it allows commitment by staff to be

less than total. There is a discouragement to making an idea work if staff know there is a cosy job waiting, if they or the position do not come up to expectations.

After about five years the project should be established enough for institutions to accept responsibility for the continuing funding, either directly or indirectly. Institutional attitudes tend to be defensive at first. The 'what-do-I-get-out-of-it' question does not permit a glib, quick answer. But, if after five years institutions are not aware of the flow of appropriate student applicants then they have every right to repeat their question.

A service fee to students is also appropriate. Free tertiary education is becoming increasingly a social luxury we neither need nor can afford. Only the right graduates are employed these days. Therefore some process to throw the onus back on to students to accept responsibility for their suitability for tertiary awards is needed.

3. Again one could argue that we are past the stage of needing full awards for employment. It is perhaps appropriate to consider more academic portfolios. By this I mean where a student may present himself to an employer in, say, an engineering field with a portfolio of study containing two years of university engineering study, a year of apprenticeship study at a technical college, and a year of sales or staff management studies at a College of Further Education. This type of match and mix may be more appropriate than a full formal degree. An informed brokering service with liaison covering institutions, students and employers could help to draw up such a profile and, through its

knowledge of employers' needs, enrol groups of students in segments of programmes at appropriate institutions. (One aspect of the 'drop-out problem' may be students' (and employers') perception of the relevance of all segments of a total programme for subsequent employment. Whether that perception is well-informed and correct is in a sense irrelevant; the net result is a drop-out.)

4. Brokering services should not be confined to tertiary programmes. Clients could be directed to what may loosely be called adult education programmes, for example secondary school matriculation studies, C.W.A. courses, W.E.A. programmes, trade union studies, Y.W.C.A. programmes, Christian Education study groups, and various radio and correspondence programmes.

5. Experience overseas would suggest appropriate patterns for location of services, types of staff, salary levels, support services and so on. It seems a combination of full-time and part-time staff is appropriate. Location which is accessible to clients is germane. Access to institutional facilities of printing, computing, etc. is desirable. Ready communication resources are paramount. Access to institutional information is fundamental. Liaison with remedial services is facilitative.

In sum, Australia needs to establish a series of brokering centres and services because of vast numbers of potential students lost in the 'madding crowd' or behind the 'black stump'. Knowles, a prominent adult educator, said: "I view educational brokering agencies as being one of the most promising educational inventions of modern times - even perhaps, the prototype of the institutional form around which all education will be organised"(see Heffernan *et al*.,1976). The question remains: Do we have the flexibility in our post-Enquiry thinking to reach beyond institutional barriers? Stephen Bailey, Vice-President of the American Council on Education, in previewing the Heffernan book wrote: "American society needs a new breed of communicators and catalysts: educational counsellors and facilitators who can become informed brokers between educational demand and educational supply". Does Australian Society have the same need?

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TO MAXIMISE THE VIABILITY OF AN ENTERPRISE: A RELEVANT PURPOSE FOR ADMINISTRATION

Thomas M. Heffernan

An enterprise that is poorly administered is one whose resources are being cut back and, by implication, whose viability or ability to grow and survive is also being curtailed. Herein lies a possible logic for administrative activity. The purpose of administration might well be 'to maximise the viability of an enterprise'. The administration methodology has been designed to accomplish this purpose and in this paper both the purpose and procedures of the methodology will be described.

THE PURPOSE OF THE ADMINISTRATION METHODOLOGY

The first step in the development of the administration methodology was to test the acceptability of the purpose 'to maximise the viability of an enterprise'. In general terms the purpose would be unacceptable if it implied a methodology that could not be developed or a methodology that would not be used once it was developed (Hutchinson, 1978). Ability to develop the methodology and its ability to be used were employed as test criteria for reasons of cost benefit. The resources used in metholodogical development would have produced no benefit if a methodology could not be generated or could not be used once developed.

The ability to develop a methodology given this purpose is contingent upon the purpose being clear and upon the purpose implying realistic rather than impractical procedures. The usage of the administration methodology once it is developed is contingent upon the desirability of the purpose to potential users such as administrators and upon the need for the methodology itself. It is unnecessary to build a methodology to accomplish this purpose if such a methodology already exists.

The purpose is clear because its accomplishment can be described in observable terms. The viability of an enterprise will have been maximised if the enterprise includes those activities and conditions that are necessary for it to grow and survive.

The purpose is practical because it implies procedures that can be developed. Some of the procedures implied by the purpose are those needed to determine the present viability of an enterprise. This type of procedure could be developed around an administrator and others answering the question: What activities and conditions indicate that this enterprise is capable of growth and survival? In answering this question a list of indicators of viability is compiled. Examining an enterprise against these indicators is one way of determining the present viability of an enterprise. Other procedures implied by the purpose involve optimisation. The development of these procedures seems likely, given the work already done in the areas of operations research and systems analysis (Nadler, 1970), planning (Steiner, 1957) and decision making (Hodson, 1974).

The usage of the administration methodology is also likely given that the methodology implied by the purpose would complement much of the existing work in the area. The purpose implies a methodology for solving new or unforeseen problems, these problems being the different indicators of viability that are generated each time the following question is answered: What activities and conditions indicate that the enterprise is capable of growth and survival? Most documented work in administration presents theories of administration, or describes characteristics of good administrators, or provides standardised solutions to specific administrative problems (Lipham et al., 1968; Walker et al., 1973). Theories, standardised solutions and lists of personal characteristics contribute little to the solving of new problems. Standardised solutions rarely resolve new problems. Theories are not solutions, they are constructs. They don't specify action, they promote understanding. And the accumulated characteristics of effective administrators, descriptions of their present and their past, at best describe who an administrator is or was in terms of actions and experiences. They don't prescribe, at least not in terms of action, who the administrator will have to be at some future point when administrative action is called for.

THE PROCEDURES OF THE METHODOLOGY

The procedures of the administration methodology have been divided into two sections. The first section identifies the area in which administrative action is required. In the second section the required action is first conceptualised and then carried out.

The first section of the methodology makes use of a question that has already been mentioned . The question is: What activities and conditions indicate that this particular enterprise is capable of growth and survival? This question is used to identify indicators of viability. Critical indicators are the areas in which administrative action is required, namely those which must be attended to in order to increase or maintain the level of some important resource such as money, staff morale or public image. This question is answered by the administrator for whom the methodology is being applied, and by staff, clients, selected members of the general public and selected representatives of funding agencies. The first section of the methodology will have been completed when an administrator has selected what he beleives to be the most critical indicators of validity. A desired state for an enterprise to be in is one in which these indicators are known to be present. Bringing about these indicators is the intent of the second section of the methodology.

If the administration methodology were being applied for the dean of a school of education the results of the first section of the methodology might be as follows:

1. The dean, staff and students (clients) of the school, and selected members of the general public and of certain funding agencies will have answered the question: What activities and conditions indicate that this school of education is capable of growth and survival?

2. Among the indicators of viability listed were: educational counselling of students, student freedom to take courses of their own choosing, the speed with which faculty reports are compiled, non-interference by the dean in faculty research and development projects, faculty teaching load and faculty initiated curriculum development.

3. The dean chose as the most critical indicator of viability non-interference by the dean in faculty research and development projects. This indicator was chosen because of its likely positive effect on staff morale which was low and was judged by the dean to be a very much needed resource for the school at this point in its development. The dean judged that other resources such as money, student

support and public image were present in adequate amounts.

In the second section of the methodology the administrator addresses a specific indicator of viability. Stated another way, in the second section of the methodology the administrator establishes in an enterprise a specific activity or condition that he believes to be indicative of the enterprise's ability to grow and survive. Given the example discussed above in which non-interference in faculty research projects was identified by a dean as an indicator of his school's ability to grow and survive, in the second section of the methodology the dean would be developing and carrying out a less directive approach to the supervision of faculty projects.

There are five parts to the second section of the methodology all of which are related by a common logic, that although at times an administrator may be the only person working on a certain indicator, more often than not the administrator will act through the supervised actions of others. In other words, delegation is the norm rather than the exception.

Each of the five parts of the second section of the methodology addresses one of the five problems that may cause delegated responsibility not to bear results. Delegated responsibility may fail because too much responsibility was delegated; the delegates did not know the boundaries within which they were to operate; the wrong delegates may have been chosen; the delegates may not have been supported as they carried out their responsibilities; or care may not have been taken to use the results that the delegates produced. The problem of delegating too much responsibility is addressed by having the administrator carefully decide what role he should play in working on the indicator. This decision is made in the light of how critical and complicated the indicator is and how talented are the staff that the administrator can draw on. The problem of delegates not knowing their limitations is addressed by having the administrator conceptualise the general tasks that must be performed in order to establish a certain indicator. The problem of selecting delegates is addressed by careful team development. Non-support of delegates is addressed by providing the delegates with such resources as information, guidance and, if necessary, funds and secretarial assistance. Finally, the non-use of delegate results is addressed first by having the administrator identify individuals or groups from within the enterprise who would use results, and then by helping these users to integrate the results into their normal operations.

CRITICISMS OF THE METHODOLOGY

It is generally recognised that some administrators have "blind spots". These are commonly defined as failures to listen to the opinions of staff, clients or the general public. In terms of the administration methodology a blind spot exists when an administrator does not consider important those indicators of viability identified by staff, clients or the general public. A blind spot represents a very serious omission when, if ignored, the indicator of viability would lower the amount of some critical resource such as money, staff loyalty or public image. Some argue that blind spots are unavoidable. However the methodology assumes that blind spots can be minimized through the use of certain procedures. Blind spots often exist either because the administrator is presented with non-negotiable demands by clients, staff, and the public or because the administrator is unable to manage his time so that a range of indicators of viability is addressed rather than just a single indicator conceptualised by the administrator. The draft of the methodology being presently compiled incorporates procedures for helping the administrator address a number of indicators identified by a number of groups, and for translating non-negotiable demands into practical requests. At present these procedures are being developed to the point where they lack logical or conceptual flaws. If these procedures are found to be effective in field tests, it can be assumed that the methodology will have solved the problem of administrative blind spots.

It is incorrect to assume that a systematic administration methodology would restrict creativity because an administrator does not interact directly with the methodology to fit individual cases. The applier of the methodology offers the administrator "freedom within a context". The context is the intent of a given methodological procedure as it has been developed at the point of application. As part of the applier's training he learns how to modify the nature, wording and sequencing of procedures to fit the client's needs, inclinations and, at times, apprehensions. This adaptive ability has been found to be important in the application of other methodologies such as those from the areas of evaluation (Rosen, 1977), decision making (Heffernan, 1976), needs analysis (Thomann, 1976) and staff development (Heffernan, 1977). In each case the adaptive ability of the applier of the methodology resulted in providing a client with a more individualised service.

Given that administration is extremely complex it is naive to assume that the effectiveness of administrators can be optimised without a systematic administration methodology. The advantage of such a methodology is that once developed it will enable the administrator to establish within the enterprise for which he is responsible those activities and conditions which indicate that the enterprise is capable of growth and survival.

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COURSE DEVELOPMENT ASSUMPTIONS AND STRATEGIES

Rod Wellard

This paper suggests broad strategies for putting into effect some generally agreed upon needs concerning professionally oriented tertiary education programmes. The suggestions are not intended to be definitive, nor are they described in great detail. Rather an attempt has been made to show that there is a basic pattern in the development of strategies to meet changing needs in professional education. Woven through the strategies are themes of integration and balance.

It is assumed that the course planning strategies in question are in general the province of the individual college, school or institute. This is the primary focus of the paper. Nevertheless many of the considerations discussed could also be applicable at the State or national level.

SOME GENERALLY AGREED NEEDS AND THEIR IMPLICATIONS

There are at least four major needs commonly recognised in developing professionally oriented tertiary courses:

1. Education programmes should be attuned to and reflect consumer and professional expectations and needs.

2. Decisions to develop, conduct and maintain courses should reflect a coordinated rational approach to the planning of vocational and professional education (for example see Report of the Working Party on Health Manpower, State of Victoria, 1978).

3. Education programmes should contain mechanisms to provide for adaptability in meeting changing needs

(for example see Eraut (1975) on resistance to change in teaching and learning).

4. Education programmes should be integrated and internally consistent in terms of their rationale, objectives, content, teaching strategies and assessment methods.

Each of these areas is examined below in terms of its implications regarding strategies for implementation.

1. Education Programmes should be attuned to and reflect consumer and professional expectations and needs.

Professional expectations may be described in terms of formal requirements and informal expectations. Formal requirements have been laid down in respect of educational qualifications, practical experience, standards of conduct, etc. Education programmes must obviously reflect these formal requirements in order to gain recognition. Informal expectations are somewhat more difficult to identify, although they are equally important for the ultimate acceptance of education programmes by the professions. Such expectations relate to what attitudes and skills are needed in practice - what 'real world' requirements are, rather than the vague notions and lofty ideals of academics. Powerful influences include status threats which arise from the influx of graduates with higher qualifications entering the workforce, and territorial feelings about the legitimate spheres of activity of professions in relation to each other. Consumer requirements and expectations are largely expressed in terms of what the professions and administrators say the consumers' needs and expectations are. This is because mechanisms to allow the consumer voice to be heard have not been well developed. Consequently a communication filter may be at work unless we are careful in assessing consumer requirements.

It is worth noting in this context that consumer groups are becoming increasingly vocal, presumably as a response to the failure of the professions to satisfy fully their client needs. It is this mix of professional and consumer requirements and expectations which provides the context for course planning. And, presumably, a 'political climate' emerges as a result of the interplay of opinion about these requirements. This politicising process may be regarded as establishing a programme pecking order through the conflict of change agents and vested interests.

What are the implications?

(a) Curriculum systems theorists provide concepts which we can use (Johnson 1967). The expectations of consumers and professionals provide a series of inputs which help to describe the context, or operating guidelines, within which programmes may be developed. Thus, for example, Ian Thomas (1978) proposes that an initial step in course planning is to identify the social system or community of interest in which the course will operate. In a very real sense these expectations may provide constraints on the exercise of academic leadership. In practical terms this means that the planning of educational programmes should include strategies which allow for the identification of the expectations of professional, consumer and other groups who may be involved or feel they have a right to be involved in programme development.

A corollary to this is that significant emphasis should be placed on explicating the rationale of programmes as distinct from programme objectives; the *rationale* of a programme should provide answers to such questions as: why is it necessary to have the programme, and why is it necessary to have the programme in the particular form proposed?

Such questions bring to the surface assumptions and preconceptions which need to be discussed and tested before programmes can be implemented effectively. Logically we might expect to start the course planning process by identifying the rationale.

It may well be, however, that it is naive to think of course planning in such a strictly sequential sense, starting with the rationale, then objectives, etc. Mace (1976) argues for a more flexible approach because the 'ends dominated' approach does not do what we pretend it does, namely, achieve a true consensus about what the course is doing.

(b) Inter-group conflict has as its necessary conditions ".. the existence of a *positive felt need for joint decision-making* and of either a difference in goals or a difference in perceptions of *reality* or both among participants" (March and Simon, 1958). The context of programme development is a situation which contains all three conditions. If programmes are to meet needs and expectations then it would seem highly desirable to develop and maintain on-going liaison and consultation with involved groups in such a way that a spirit of real involvement in decision-making processes is generated. Whilst research points to disadvantages arising from group decision-making (e.g. Dill, 1964) there are significant points in its favour, particularly in educational institutions (e.g. Shaw, 1975).

(c) These strategies for integration of the context and rationale of programmes into their overall development, and of group involvement, imply a modified view of academic leadership. Teaching staff should place active participation in professional groups high on their list of priorities. In this way academic isolationism may be avoided and the often wider academic view balanced against other views in intra-professional discussions. This view of academic leadership places emphasis on normative re-educative strategies rather than power coercive approaches (Chin & Benne, 1969). Such an integration of academic activity reduces the potential for academic entrepreneurship and allows for the growth of a real sensitivity to professional needs.

2. Decisions to develop, conduct and maintain courses should reflect a coordinated rational approach to the planning of vocational/professional education.

At one level this is essentially a problem for State-wide coordination. In Victoria, colleges affiliated with the Victoria Institute of Colleges have been required to submit new course plans for approval. The new developments have been considered by broadly representative committees of the V.I.C. in the various disciplines according to detailed criteria. A significant emphasis in V.I.C. guidelines has been placed on rationalised development and the fostering of 'centres of excellence'. Lincoln Institute, for example, may be regarded as such in that it specialises in programmes in health education. This creates a responsibility for it to develop a total programme structure which is integrated and balanced both vertically and horizontally. Such a programme should provide an appropriate balance of undergraduate diploma and degree programmes; graduate diplomas and masters degree programmes, and continuing education programmes.

Horizontal balance and integration considerations require an adequate range of different programmes to meet major needs whilst avoiding overfragmentation. To some extent these problems are not capable of clear resolution, and therefore strategies must be evolved which permit continuing dialogue between educationists and practitioners. There is a need for course planners to look very closely at other courses before proceeding with new developments. Any new developments must be evaluated in terms of the way they will contribute to and modify the 'package' of course offerings being currently provided. Rationalised development and maintenance strongly imply strategies for continuous evaluation and review of courses with the consequent potential for redevelopment and discontinuation if appropriate.

3. Professional education programmes should contain mechanisms to provide for adaptability in meeting changing needs.

Unfortunately the institutionalisation of professional courses has tended to reinforce and maintain the status quo. This has led to professional fragmentation where new needs have emerged. The philosophical roots of colleges such as Lincoln Institute are to break down rigid professional barriers and develop more integrated programmes. However to adapt to change in this may require that strategies be developed to identify where change is needed, and how it can be implemented. This implies attention to:

- problem identification;
- data gathering and analysis;
- generation of solutions;
- implementation of solutions;
- gaining acceptance of change proposals/solutions.

Such considerations involve a systematic approach to course evaluation which not only looks at subjects within courses, and courses in their entirety, but also looks at the total curriculum and the attitudes and expectations of the people involved. To the extent that "the curriculum is the focal point of all aspects of the wider field of educational planning" (Campbell 1969), it follows that evaluation should:

- be a participative activity;
- provide feedback;
- be continuous in nature;
- concentrate on key elements in the educational process, e.g. plans, teaching, resources and administration.

The feedback from evaluation should be the subject of wide debate both informally and formally, and be analysed in the light of changing needs as expressed in part by professional groups. Arising from such feedback may emerge proposals and developments for new programmes or modifications and adaptions of existing programmes.

4. Education programmes should be integrated and internally consistent in terms of their rationale, objectives, content, teaching strategies and assessment methods.

The literature in the curriculum field commonly identifies

1. aims and goals;
2. content and learning experiences;
3. teaching;
4. assessment of learning;

as the major elements in curriculum planning.

Most writers emphasise the integrated nature of these components. Nevertheless when it comes to the practical activity of planning a new programme or even teaching an existing programme there often appears to be little conscious effort to show the integration of these components. This is unfortunate because it is possible to use techniques which can assist in achieving integration and balance of components. Given that courses are being developed by representative committees these strategies can provide effective 'agendas' to focus discussion in a purposive way. Through explication of the relationship between components it is likely that better balanced programmes will be produced.

The following are a few suggestions as to how this may be achieved.

1. Within the rationale define the major focus (or foci) of the course. This might take the form of stating 2 or 3 key performance areas of the graduate. These can be used as the basis for generating the course objectives by taking each focus in turn.

2. In order to integrate objectives with content an objectives-content matrix can be used. This device is a means of indicating which

subjects or units will help realise individual course objectives. It can thus provide a check for proper balance within the course. More detailed description of subjects and units could indicate the course objectives to be realised and spell out more specific unit objectives which arise from the course objectives.

3. In order to integrate teaching methods more effectively with subject matter a content-process matrix (Taylor, 1967) can be used. By listing all subject areas in a matrix against all teaching methods the overall pattern of teaching may be integrated into subjects. The completed matrix allows the relative proportions of various teaching methods to be checked for balance. In addition, by reference back to the objectives it can be checked whether teaching methods remain consistent with course objectives. A similar matrix can be developed for assessment methods and subject areas to ensure a balanced pattern of assessment.

CONCLUSION

This paper has attempted to develop themes of balance and integration in suggesting strategies for action to meet commonly agreed needs. The strategies suggest an integration of professional, consumer and academic expectations; balanced representation in the decision-making process; a rational evaluation of individual programmes in terms of the total curriculum; a participative process of evaluation which is integrated with new programme development; and means of integrating and balancing course components.

The strategies have been identified in broad terms only. Each of the major areas referred to could be developed in much greater detail. Nevertheless their identification may suggest some fruitful areas for course planners to pursue and for research of a particularly useful nature to be carried out.

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COOPERATIVE COURSE DESIGN: A CASE STUDY IN POST EXPERIENCE EDUCATION

Dave Boud

MODELS FOR COURSES

The traditional model of tertiary education is one in which students fit themselves to courses; the course is prescribed by the staff of the educational institution and students, if they wish to enrol, have to accommodate themselves to the course.

This model is breaking down as higher education becomes less elitist, more available to students, and more consumer oriented. We need to find an alternative which is more compatible with the participative societies of the late twentieth century in which responsibility is shared more equitably.

The simplest alternative is one in which courses are fitted to the needs of students; course structure and content are adapted to the needs of students who enrol. Within existing institutions, especially in traditional disciplines, there are many constraints on the implementation of such a model. However it is possible to move a long way towards implementation within these constraints.

WHAT ARE THE CHARACTERISTICS OF THE STUDENTS?

Students possessing characteristics of adult learners differ from those who possess the characteristics of child learners. The following table illustrates some of these differences.

CHILD-LIKE LEARNERS	ADULT LEARNERS
Dependent	Independent/interdependent
Lacking experience	Highly experienced
Possessing limited skills	Possessing a wide range of skills
Sometimes lacking in motivation	Highly motivated
Unfamiliar with applications	Often familiar with applications
Subject - centred	Problem - centred
Flexible time scale	Many demands on time
Typically full-time	Typically part-time

The students who enrol in the Graduate Diploma/Masters course in Science Education at the Western Australian Institute of Technology have the typically adult learner characteristics similar to almost all students in courses at this level. One of the main aims of the course is to enable the students to develop these characteristics further and become fully independent learners.

COURSE RATIONALE

The course is based explicitly on a set of assumptions about learning and the nature of an educated person. It is intended that the aims and objectives of the course, the programme and the assessment and evaluation procedures should all be compatible with these assumptions. In the case of doubt reference is made to these in order to check on the consistency of the approach. This check can be made by any of the participants, staff and students, at any time so that discrepancies can be discussed.

The participants are accepted as fully responsible adults who have a great deal of experience and expertise to bring to the course. And it is the explicit aim of the course to utilise this available fund of skills fully.

It is assumed that the characteristics of an educated person who works as a full professional in any area of activity are as follows:

> They are self-directing and self-motivating, that is, they are able to specify clear goals for their activities drawing upon all the necessary resources to pursue their goals, and they are able to evaluate their performance of the tasks they have established and judge the extent to which their goals have been met. Such people do not act in isolation but can draw upon the resources they need wherever they may be found both within and outside educational institutions.

One aim of the course is to assist participants in achieving the skills of self-directed learning. This cannot be done in any way that encourages the dependence of the participants on the staff of the institution but, on the other hand, it is recognised that support is required and that this should be available when needed. Specifically, what is excluded is any content matter, teaching method or assessment procedure that is applied unilaterally by staff on students. Suggestions about the inclusion and use of certain topics or activities can be made by either group but these ideas are available to be challenged by either party and the reasons for their inclusion made explicit and discussed.

The course is not an independent study course but rather a cooperative exercise which draws upon the expertise of the participants to provide a much wider range of learning resources, in terms of people, than an individual project can do. The course is mutually designed in a collaborative effort between staff and students, and is conducted by both staff and students. The characteristic which is fostered can more accurately be described as mutual interdependence based upon independence of judgement.

COURSE DESIGN

The course has been designed for a particular purpose and whilst the above rationale may well have relevance in many other situations the particular course design is for a specific course: the structure of others based upon the same rationale may look totally different.

The course is designed by staff and students in collaboration and the content varies depending on the needs and interests of the participants. The following are the main aspects of the structure of the course; they are a structure for the process of the course, not a structure for the content. The importance of a clear structure for a course is recognised, but the structure adopted is one that has been negotiated between staff and students rather than imposed on an *a priori* basis.

INITIAL PLANNING

Introductions
Discussion of rationale
Specification and ranking of individual goals
Decision on group goals and categories
Establishment of on-going planning procedures
Task allocation
Resource identification

ON-GOING ACTIVITIES

Planning sub-groups
Process analysis

Peer-assessment

TERMINAL ACTIVITIES

Self assessment (with some peer-assessment)
Course evaluation

This outline describes only the structural components of the course; the learning climate in the group is just as significant. Students are expected to intervene at any time if the course is not fulfilling their needs and interests. A cooperative climate needs to be established and this can only be done through respect for the goals of others and the contributions that they can make. Much of the learning occurs through involvement in the process and through students creating learning situations for each other. Outside experts are invited and the tutor contributes in his area of expertise. The creation of the climate owes much to the tutor, who in this situation has to fulfil many roles - for example:

* Facilitator, assisting the process of learning and creating a supportive climate;

* Peer, participating in learning as just another learner;

* Expert, providing specialist input;

* Exemplar, acting as a model for the kinds of learning that can take place.

OUTCOMES AND APPLICATIONS

Whilst many of the particular procedures and methods will change, my belief in the fundamental principle of students taking responsibility for their own learning has been reinforced. The output from the group was far greater than my expectations: they were working together in teams to plan and implement activities and they were engaging enthusiastically both in aspects that they had prepared themselves and in those designed by their fellow students. Outside contributors commented on the high level of professionalism and preparation that students had undertaken, and the State accreditation committee was also impressed with the standard of the course.

Students are applying the methods of working that they have experienced in this course to their own teaching, and many aspects of the style of the course have been used from lower high school to professional workshops for teachers.

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STUDENT REACTIONS TO PSI, LECTURE AND LABORATORY TEACHING

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K.R. Vost

A recent survey on research comparing the "Personalised System of Instruction" (PSI) with conventional teaching methods found that the average student performance was superior for the PSI method in all of 28 comparisons (Tareggia, 1976). There have been some cases where PSI has been tried and abandoned (e.g. Friedman et al., 1976), but in most cases teachers and students alike continue to find it a desirable teaching method (Putt, 1977; Yuan Li & Reames, 1977). In spite of this recommendation it was with some trepidation that we introduced the PSI method for teaching first year Physics at Robinson College in New South Wales because most of our students are part-time. This means that they only have a limited amount of time available for home study and so might find the demands of a PSI course excessive. In addition we have students with a wide range of backgrounds - some are directly out of high school while others are older students who have already completed technician or teacher training courses. The younger students have graduated from high schools in different Australian States and overseas, with each State having a different physics syllabus and academic standard. The range of entry levels is therefore large. In addition the students are enrolled in different courses, either science or engineering, and it is not practicable in a College as small as ours to divide the class. It was because of the variety of students in the one class that we thought it worthwhile to report their reactions to the PSI method.

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One result emerging from a questionnaire given to these students was their low ranking of the teaching laboratory as an effective learning situation. For this reason, while one of the authors was on study leave, a similar survey was made of a group of students at the University of Saskatchewan, Saskatoon, Canada. A short summary of the teaching methods used for the Australian and Canadian students is given below.

The Australian group consisted of 20 students in the 1976 class (16 part-time) and 13 students in the 1977 class (9 part-time). Most of the students were majoring in some branch of engineering or science but not physics. For many it was a terminating course. The PSI materials were prepared by O'Halloran, Dunn and Eyland (1976) of the School of Physics, University of New South Wales. The Study Guide included, for each PSI unit, the objectives of the unit, text book references, sample problem solutions, further practice problems for the student and some further teaching material to supplement the text book. The text used was by Weidner and Sells (1975): Elementary Physics, Classical and Modern. The class met for four hours a week during which time students could do unit tests, have them marked and also consult with the instructor, who was a staff member. Although the instructor was available at other times the part-time students had little extra free time to visit him. The laboratory was run on more conventional lines with short notes, including questions, on each experiment. The laboratory time was only two hours per week, so most experiments ran over two weeks with the second week being used mostly for writing-up.

The Canadian group included 59 students mostly full-time. The course was a terminating one for students doing scientific subjects but not physics or engineering. Three conventional lectures were given each week (with about 200 students in the class) together with a one hour tutorial (30-40 students in the class). In addition a three hour laboratory class was held with comprehensive instructions provided for each experiment. The sample consisted of two of the tutorial classes.

REACTIONS TO PSI (AUSTRALIAN STUDENTS)

The academic year extends from March to November and is divided into two sessions. At the end of 1976 and 1977 the students were given a questionnaire. This included the various Likert type questions shown in Table 1, in which the mean score and standard deviation of results for each question are also given.

TABLE 1

STUDENT QUESTIONNAIRE RESPONSES, 1976

Question		Mean Score	Standard Deviation
1.	On the whole has the absence of lectures helped or hindered your learning? A great help 1 2 3 4 5 a great hindrance	2.6	1.2
2.	There have been few class demonstrations, films, etc., included in this course. Do these help your learning much? A great help 1 2 3 4 5 no use to me	2.3	1.5
3.	How do you find the grading of the tests? Too strict 1 2 3 4 5 too easy	2.6	0.7

Question		Mean Score	Standard Deviation
4.	Looking back now at your Session 1 work (5 months ago), do you remember more from learning the PSI way or studying for a single examination at the end of Session 1? More from PSI 1 2 3 4 5 more for single exam	2.1	1.1
5.	How much of Session 1 work do you remember? Most of it 1 2 3 4 5 hardly any	2.6	0.9
6.	Overall would you say you have done more work in physics this year than in other subjects? A lot more 1 2 3 4 5 a lot less	1.9	1.1
7.	If you were given the choice, would you choose to study the PSI way in future? Most definitely 1 2 3 4 5 certainly not	2.1	1.2
8.	Would you like all your courses to be PSI or do you prefer a mixture? All PSI 1 2 3 4 5 a mixture	2.9	1.5

This table shows that the students were most favourable to PSI, that they _thought_ they remembered more by studying this way (though this was only their opinion) and that they did more work in physics than in other subjects taught by conventional methods. The last question asking whether _all_ courses should be PSI yielded an ambivalent response. In many ways it seemed better to have a variety of study methods for different subjects. It might be a bit too demanding to have all subjects run by PSI.

The 1977 class gave very similar responses to the questionnaire with no result significantly different. Thus the initially good response was not merely due to the effect of initial enthusiasm over a new method (see Bienik & Zeilik, 1976).

Some reasons for these responses were found in earlier surveys taken at the end of the first session in 1976 and 1977 (half way through the year). Students were asked for their general comments and were given the following questions as a general framework for their replies:

1. How has your total amount of work in this course compared with that in other first year courses in which you achieved approximately the same mark?
2. Do you feel that your study techniques have improved as a result of the course?
3. Have you found it an advantage to be able to study at your own pace?

4-7. Comments on tests, study guide, text and laboratory.

The comments received confirmed that most students did more work in their PSI course than in other subjects but preferred PSI nevertheless. Most students appreciated being able to study at their own pace, because they were not left behind in some areas (as in lecture courses), while on the other hand they were not forced to listen to material they already knew. (It is very difficult for a lecturer to select an optimum rate of progress when the class has such a variety of backgrounds as ours.)

Students could also isolate their study to other subjects where necessary. Whereas a full-time student can re-arrange his extra-curricular activities to allow a large amount of work in a short period before an examination or assignment, part-time students have the constraints of a job and often of family commitments. On the whole the students found PSI more relaxing, though for a few the pressure to keep up with the class or to get ahead outweighed the relaxing effect. Their progress was constantly obvious to them and this was self-rewarding. Some students felt they learned their physics in greater depth as they were forced to study each unit. Others (the brighter students) thought that PSI did not encourage deeper study as they tended to learn only enough to pass each test. Students' comments on their study techniques were also ambivalent. Some appreciated the structure provided by the PSI materials with worked examples and self-tests and thought the tests were much better than "swotting" for a single examination. Others "swotted" for each test and thought they quickly forgot the material in earlier tests. In this regard one might question whether the aim of these courses is for students to "remember" the material on one occasion so that, if they look at it again in the future, their understanding will return. One student said the work was harder without a lecturer to "pump in" ideas, while another said there was more work but it was not as hard. Clearly different students prefer different learning techniques; ideally they should have a choice between lectures or PSI but this is not practicable in a relatively small college.

Another feature of PSI which the part-time students appreciated was the ability to choose what level of passing grade they should aim at. Those hard-pressed for time opted to do only enough units to achieve a minimum pass and thus concentrate on studying for conventional examinations in other subjects. Others could achieve higher level passes by doing additional units and/or by sitting for a formal examination.

SITUATIONS IN WHICH LEARNING IS MOST EFFECTIVE

The questionnaire given to PSI students at the end of 1976 and 1977 included one item in which they were asked to rank, from 1 to 7, the situations in which most of their learning occurred. The mean ranks, with standard deviations, were as follows for the 1976 class:

Learning Situation	Mean Rank	S.D.
My own reading of text and study guide.	1.9	1.4
My own performance of practice problems.	2.8	1.7
Performance of unit tests.	3.3	1.6
The after-test interview with the lecturer.	3.4	1.3
Consultation with the lecturer other than after test.	5.1	1.6
Performance of laboratory experiments.	5.7	1.4
Talking with other students about the work.	5.7	1.3

The only surprising result here is the consistently low ranking of the laboratory classes. Another item on the questionnaire revealed that most of their study was done at home even though they had classes several evenings a week. Again the 1977 class responses were not significantly different.

REACTIONS TO LABORATORY CLASSES

Following the low ranking of laboratory classes by Australian students, the Canadian group were questioned further on this topic. As a whole group they ranked the laboratory class at 5.7 (± 0.1) out of 7 as the situation where most learning occurred, last equal with "talking with other students about the work". The females in the group, who comprised forty four per cent of the group, rated the laboratory class consistently worse than did males - for example when asked to rank which teaching situations were most effective, males ranked the laboratory at 2.6 (± 0.2) out of 4 and females at 3.7 (± 0.3). When asked to rate the laboratory as interesting or dull on a 1 to 5 scale, the result for all students was 3.3 (± 0.3), slightly on the dull side, and when rating the usefulness of material learned in the laboratory the rating was 3.5 (± 0.1), more useless than useful. These results confirm the authors' impression that there is a good deal of dissatisfaction among students with undergraduate physics laboratory classes. In addition to supplementing the students' understanding of physical processes the laboratory class also aims to teach skills in the use of instruments, but students do not perceive these as relevant. And in the affective domain it aims to increase the students' interest in the subject, but this aspect does not seem to be succeeding either. As considerable resources of time, money and manpower are involved in the running of student laboratories this is a serious situation calling for more research by both physicists and educationists.

REACTIONS TO LECTURES

The majority of the Canadian students surveyed thought that the situation in which most of their learning occurred was during lectures. This situation was ranked ahead of home study, tutorials, etc. It may be that this was an immature response or that the class had a particularly good lecturer. The results of some questions given to these students without prior warning indicated that only the most simple concepts were grasped by the average student after exposure to a lecture alone.

CONCLUSIONS

A group of part-time students found PSI an attractive method of studying elementary physics. And it is interesting to note that they preferred this method even though they had limited time for home study, where most of their learning was thought to have occurred.

Although the majority of students preferred PSI, some reacted differently to aspects of the method. Ideally a choice of study methods should be available, but this is only possible with large classes.

The laboratory class received a low ranking as a learning experience, with females rating it lower than males. In many ways this activity does not seem to be fulfilling its aims.

Students in lecture classes believe that much of their learning actually occurs during the lecture.

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TERTIARY SCIENCE INSTRUCTIONAL MATERIALS: A COGNITIVE ANALYSIS

M.T. Prosser

INTRODUCTION

In recent years there has been an increasing interest among tertiary science educators in the development of remedial programmes for first year tertiary science students. At the Western Australian Institute of Technology, first year Bachelor of Applied Science students in biology are required to take a two semester course in physics. A number of these students (as many as 70%) have had no previous formal contact with physics. But these students with no previous contact are not the only students who have trouble coping with first year physics. Tertiary physics teachers often complain that their students do not understand the basic concepts. By understanding is meant the ability to apply concepts in Bloom's higher order objectives. John Gilbert (1977) has attempted to isolate some of the factors which may effect student misunderstandings. Among these are

1. a lack of formal contact at earlier stages;
2. incorrect teaching and learning at earlier stages;
3. the level of intellectual development of the students entering tertiary courses.

In attempting to solve problems associated with these factors one must take due regard of both the pre-knowledge requirements of courses and their intellectual requirements. The pre-knowledge requirements of a course refers to the knowledge that a student must possess before commencing the course. The intellectual requirements of a course refer to those skills and abilities a student must possess before commencing a course.

A major component of any tertiary science course is the instructional materials which a student uses. Thus in association with the development of the bridging/remedial programmes for the WAIT physics course mentioned above, it was decided to examine some of the instructional materials of the course. An analysis of this material was important for at least two reasons:

1. the results of such an analysis would provide a first approximation of the cognitive requirements of the course;
2. if some of the material were to be used by the student in the remedial mode, then the cognitive requirements of that material should not exceed the cognitive abilities of the student.

The literature has indicated a number of investigations of the pre-knowledge requirements of physics courses (e.g. O'Connell et al, 1969). On the other hand the intellectual requirements of physics courses have not been so well investigated (see Hartford and Good, 1967). It was decided that this study would investigate specifically the intellectual requirements of two chapters of the prescribed text for the course. The two chapters chosen were on mechanics. They were chosen because mechanics is usually the first topic taught in introductory physics courses, and because this topic causes many problems for beginning students. The text used was Physics for Biology and Pre-medical Students (L.H. Greenberg, 1975).

METHOD OF ANALYSIS

The study attempted to obtain the major instructional and pre-requisite concepts of the mechanics section of the text and to determine the intellectual level at which these concepts were defined - that is, to categorise concepts in terms of the intellectual skills required to understand them. In the search to define these concepts a set of instructional objectives were written for the section and a task analysis was conducted on each of these objectives. The task analysis was performed in the Gagné style (White, 1975) by asking the question of each preceeding objective in the sequence or hierarchy "What must a student be able to do before he can achieve this objective?"

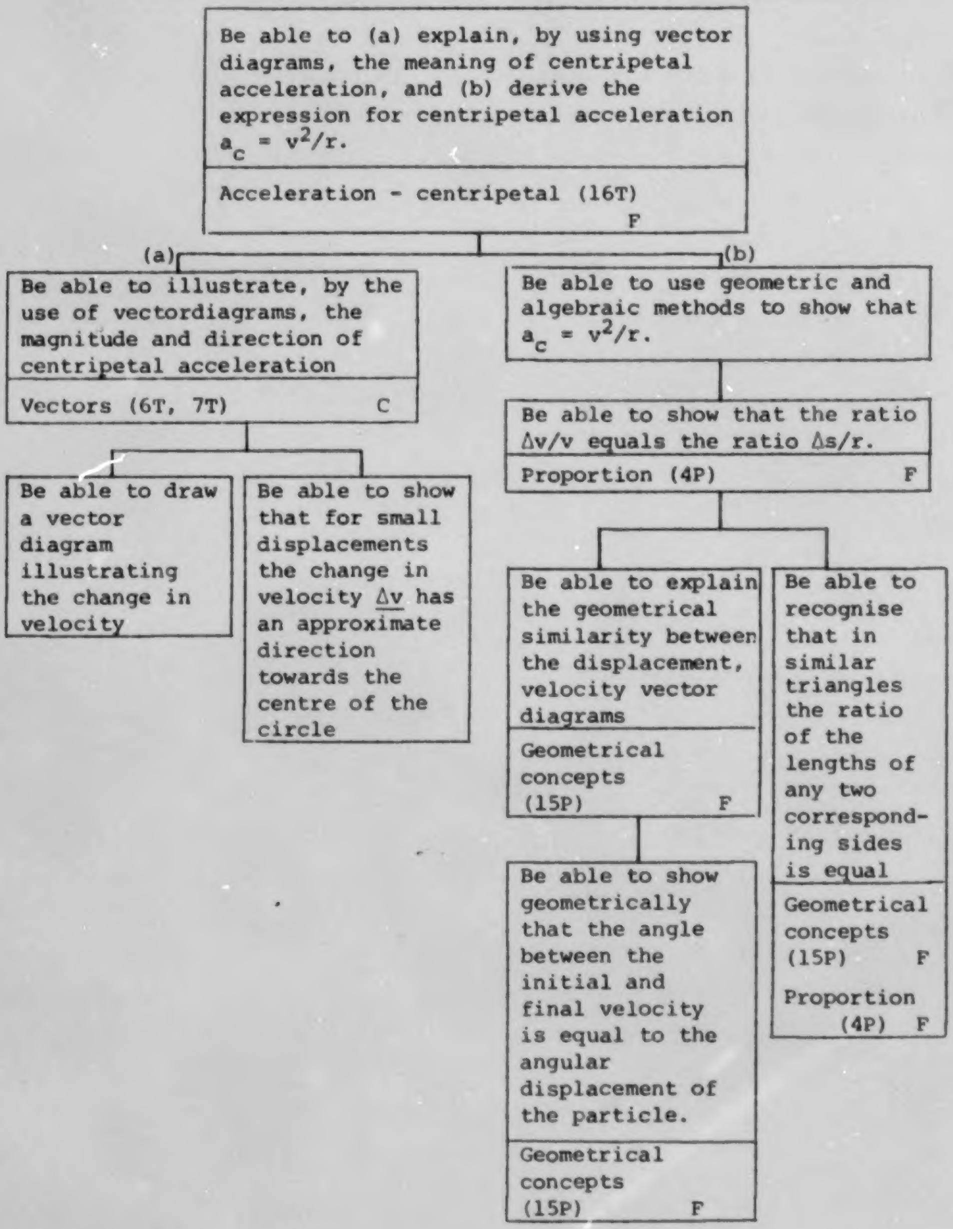
Each of these hierarchies was then discussed with an experienced tertiary physics teacher, and changes made as seen appropriate by the investigator. Each of the objectives was examined, and the major concept involved in that objective was explicitly defined in terms of that objective and therefore of the text. The concept title was attached to each objective and defined separately in a set of pre-requisite and instructional concepts (see Table 1).

At this stage it was necessary to use a classification scheme which would enable the intellectual level of the concepts as defined to be determined. The scheme chosen was that developed by Collea (Collea et al., 1974) which was based upon the Piagetian theory of cognitive development. This scheme was adopted for several reasons. One of these was the fact that Piaget had examined adolescents by observation and interview, as they attempted to solve laboratory tasks in physics. It was therefore felt that the classification scheme based upon these observations would be particular by appropriate to physics. Another reason was that the scheme had been operationalised over a number of years (Lawson, 1973) and would therefore be expected to be of value without further development.

Collea defined concrete concepts to be those which "can be derived by using concrete reasoning patterns" (Collea et al.,

TABLE 1

EXAMPLE OF A LEARNING HIERARCHY DEFINED BY TASK ANALYSIS


Be able to (a) explain, by using vector diagrams, the meaning of centripetal acceleration, and (b) derive the expression for centripetal acceleration $a_c = v^2/r$.
Acceleration - centripetal (16T) F
(a)
(b)
Be able to illustrate, by the use of vectordiagrams, the magnitude and direction of centripetal acceleration
Vectors (6T, 7T) C
Be able to use geometric and algebraic methods to show that $a_c = v^2/r$.
Be able to draw a vector diagram illustrating the change in velocity
Be able to show that for small displacements the change in velocity $\underline{\Delta v}$ has an approximate direction towards the centre of the circle
Be able to show that the ratio $\Delta v/v$ equals the ratio $\Delta s/r$.
Proportion (4P) F
Be able to explain the geometrical similarity between the displacement, velocity vector diagrams
Geometrical concepts (15P) F
Be able to recognise that in similar triangles the ratio of the lengths of any two corresponding sides is equal
Geometrical concepts (15P) F
Proportion (4P) F
Be able to show geometrically that the angle between the initial and final velocity is equal to the angular displacement of the particle.
Geometrical concepts (15P) F

1975: 9-3). Formal concepts are those which can be understood by using formal reasoning patterns. These are summarised below.

Concrete reasoning patterns used in the understanding of physics concepts:

C1. understands concepts defined in terms of familiar actions and examples.

C2. applies conservation reasoning,
i.e. if a concept is conserved in a process, the student is able to use that conservation in problems involving that concept.

C3. establishes one-to-one correspondences and arranges data in increasing or decreasing sequence.

C4. makes simple classifications and successfully relates systems to subsystems, classes to subclasses.

Formal reasoning patterns used in the understanding of physics concepts:

F1. understands concepts defined in terms of other concepts or through abstract relationships such as mathematical limits.

F2. imagines all possible combinations of conditions even though not all may be realised in nature.

F3. separates the effects of several variables by holding all but one constant.

F4. uses theories or idealized models.

F5. recognises and applies functional relationships, such as direct and inverse proportion.

(Collea et al., 1975: 9-4)

Over recent years empirical evidence has been accumulating which indicates that "the majority of adolescents and young adults function at the concrete operational level (i.e. use only concrete reasoning patterns) when it comes to understanding much of the science content at the secondary and the college level" (Chiapetta, 1976: 255). This provides further evidence for the usefulness of such a classification scheme.

The concept classifications were independently validated by experienced science educators.

Results of the Analysis

In validating the learning hierarchies, the important criterion was that they were internally consistent. The hierarchies were not necessarily reproducible by another physicist. It is recognised that all pre-requisite objectives and concepts may not have been identified by the above method, but one would expect this procedure to be more exhaustive than determining them by intuition.

Some examples of the concept classifications are shown below.

Vector Quantity - Instructional Concept

A vector quantity was defined as one which has magnitude and direction. This concept definition can be explained in terms of everyday experiences - for example, walking 3 miles east places one in a different position from that of walking 3 miles west. Thus the concept makes use of concrete reasoning pattern C1 and is classified as a concrete concept.

Force - Prerequisite concept

If we define force in terms of pushes and pulls, then again understanding is achieved through concrete reasoning pattern C1. This classifies force as a concrete concept.

Force - Instructional concept

If force is defined as being proportional to mass and acceleration, then concrete reasoning pattern C1 is not sufficient. The concept is defined in terms of the other abstract concepts of mass and acceleration, and therefore formal reasoning pattern F1 is involved. The concept of proportionality is also included, thus requiring formal reasoning pattern F5. Hence force is a formal concept.

Force - Instructional concept

Force is now defined as the rate of change of momentum. Momentum is an abstract concept, therefore formal reasoning pattern F1 is again involved. In addition, rate of change requires F5 for understanding. But this definition is derived from F = Ma, thus force is defined in terms of a postulatory deductive system, thus requiring formal reasoning pattern F4. So force with this definition is again a formal concept.

The results of the analysis are summarised in Table 2, and Table 3 shows the amount of agreement between the two independent judges who classified the various concepts.

TABLE 2

NUMBER OF CONCEPTS CLASSIFIED AS CONCRETE AND FORMAL

	Instructional Concepts	Pre-Requisite Concepts
Chapter 6:		
Concrete	3(1)	6(6)
Unclassified	0(2)	0(1)
Formal	11(11)	10(9)
Chapter 7:		
Concrete	5(3)	10(10)
Unclassified	1(2)	0(1)
Formal	23(24)	8(7)

Note: 1 Unclassified category includes those concepts for which the classification was unsure.

Note: 2 The numbers in brackets are the results of the independent classification by another physics educator.

TABLE 3
AMOUNT OF AGREEMENT BETWEEN INDEPENDENT CONCEPT CLASSIFICATIONS

	Instructional Concepts	Pre-Requisite Concepts
Chapter 6:		
Agree	11	15
Disagree	1	0
Chapter 7:		
Agree	26	15
Disagree	0	2

Note: Does not include the 7 concepts which were left unclassified.

Of the total 77 concepts, 31% were classified as concrete by one classifier and 26% by the other. On the other hand, 68% were classified as formal by one classifier and 66% as formal by the other. Of the 70 concepts which were classified by both classifiers, there was a 96% agreement. It should be noted that 9% of the concepts were left unclassified by one or other of the classifiers. Thus there seems sufficient agreement between classifiers to claim that the procedure is reliable.

The results of this classification strongly suggest that the understanding of the text requires the students to be capable of understanding formal concepts, that is, to be capable of using formal reasoning patterns.

DISCUSSION OF RESULTS AND CONCLUSIONS

As mentioned previously, a substantial proportion of students at the upper secondary and lower tertiary levels seem to use only the concrete reasoning patterns. Table 4 shows a listing of research to date indicating the percentages of such students who are at the formal or concrete operational level as measured by their attempts at solving the tasks developed by Piaget and others.

These results refer substantially to the United States of America, although the results of Ankney and Nelson are of special significance to this study. Ankney and Nelson (1977), in a study conducted in Western Australia, found that only 32% of a stratified random sample of third year student teachers attending a college of advanced education were at the formal operational stage. They stated: "The percentages of formal and non-formal thinkers are similar to the findings obtained by Renner and Stafford (1972) and Sayre and Ball (1972)" (Ankney and Nelson, 1977: 11).

Thus if a substantial proportion (perhaps up to 60%) of our junior undergraduate science students are capable of using only concrete reasoning patterns; and if, as this exploratory study has suggested, a majority of the concepts presented to these students are formal concepts, then the conclusion is that a large proportion of these students will not understand the majority of the concepts taught. (Lawson (1973) has found that students cannot understand formal concepts until they are at the formal operational stage.)

If such a conclusion is valid, we must examine what can be done to make our courses more appropriate to the students' level of understanding. Firstly, we could try to improve the students' reasoning abilities before they enter tertiary education. But in attempting to develop courses at the secondary level which have as a major objective intellectual development, the results of Ankney and Nelson's study of the proportion of senior undergraduate education students who are concrete operational themselves, will need to be studied carefully. Secondly, the intake into tertiary science courses could be examined with a view to admitting only those students who can use formal reasoning patterns. This would exclude those students whose reasoning patterns develop during the early part of their science courses.

If we do accept students who are, at the beginning of their tertiary courses, capable of using only concrete reasoning patterns, then we have a responsibility to provide courses appropriate to their needs and abilities. Some alternatives may be to:

1. change our present courses so that they do not require formal reasoning patterns;
2. make intellectual development a major aim of our science courses.

Obviously the first alternative would be unacceptable in an undergraduate programme, thus leaving the second alternative as the only acceptable one. There have been a number of programmes developed recently which have intellectual development as a major aim (see Fuller *et al.*, 1977 for some examples).

In attempting to examine and to solve these problems, the analysis of the intellectual requirement of the instructional material will need to be a major concern for both curriculum developers and evaluators.

TABLE 4

RESULTS OF SELECTED INVESTIGATIONS OF THE COGNITIVE LEVELS OF LEARNERS

SOURCE	SAMPLE	NO. OF TEST ITEMS	% CONCRETE	% INTERMEDIATE	% FORMAL
LAWSON & RENNER (1974)	Grade 10 Science, 96 Students	6	68	20	5
	" 11 " , 99 "	6	70	23	8
	" 12 " , 97 "	6	64	21	12
	143 College Freshmen	5	51	27	22
	51 Grade 11/12 Biology Students	4	30	35	35
	50 " " Chem. "	4	4	18	78
	33 " " Phys. "	4	37	33	64
LAWSON & BLAKE (1976)	68 High School Biology Students	3	47	-	53
RENNER & STAFFORD (1972)	Grade 7,8,9 298 Students	6	77	13	5
	" 10,11,12 290 "	6	67	17	14
McKINNON & RENNER (1971)	131 College Freshmen	5	50	25	25
GRANT & RENNER (1974)	89 Biology Students - mean age 15	1	52	-	48
RENNER & LAWSON (1973)	22 Law Students	1	14	-	86
	44 " " - 2nd & 3rd Year	1	30	-	70
LAWSON, NORDLAND, DE VITO, (1975)	71 College Freshmen	4	18	66	16
SAYRE & BALL (1975)	81 Senior School Biology Students	5	x	x	32
	67 " " Chem. "	5	x	x	69
	57 " " Phys. "	5	x	x	81
KOLODIY (1975)	20 BSCS Biology Students	2	15	50	35
	25 College Freshmen Phys. & Maths.	2	8	60	32
	25 College Seniors	2	8	28	64

SOURCE	SAMPLE	NO. OF TEST ITEMS	% CONCRETE	% INTERMEDIATE	% FORMAL
LAWSON, BLAKE & NORDLAND (1974)	51 B.S.C.S. Biology Students	4	30	35	35
RENNER (1977)	811 Grade 10,11,12 Students	4	57		43
	344 " " "	4	64		36
AUSTRALIAN STUDIES					
TISHER (1971)	39, 15-17 year olds	3	54	-	46
DALE* (1975)	18 year olds	x	x	x	65
BLAKE (1977)	56 Grade 11 Students	4	33	-	67
	31 " 12 "	4	18	-	82
	41 " 11 "	4	42	-	48
	24 " 12 "	4	38	-	62
ANKNEY AND NELSON (1977)	41 Assistant Teachers (Median age 21)	3	-	-	32

* Estimates only
x Not Available
- Not Applicable

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PLANNING THE EVALUATION OF A MAJOR UNIVERSITY COURSE

I.H. Barham

This paper discusses processes and decisions in planning the evaluation of a University course; it reflects experience in planning the evaluation of the Foundation Programme in the School of Humanities at Griffith University in 1978.

THE COURSE

This one-year, integrated course, undertaken by the 200 students who enter the School annually, constitutes the first third of their Bachelor of Arts degree.

The School of Humanities has interests covering comparative literature and social history, sociology, film and media studies and political theory. These are represented in the Foundation Course, but the course itself is centred around four major themes and a project. The themes are:

1. Introduction to University and the Humanities.
2. Intellectual Craftsmanship.
3. Critical Judgement.
4. The Intellectual in Society.

The weekly teaching arrangements consist of four 2-hour sessions (which include a lecture to the whole group followed usually by discussions or activities in groups of about thirty), two 1-hour tutorials and a film showing. Assessment is mainly by means of assignments, together with two lightly weighted examinations, and the project. The teaching team consists of between twenty and thirty staff, about twenty-five giving lectures, twenty taking regular tutorials, and seven conducting the discussion/activity part of the two-hour sessions.

The course in 1978 is new, replacing the previous programme which had run for three years.

THE ORIGIN OF THE REVIEW

The Academic Committee of the University, which originally approved the new course, requested reports on certain of its innovative features, for example, the 2-hour lecture plus discussion/activity sessions, the integration of film with the rest of the course, and the project work. This request was used as the spark to initiate the evaluation (but more important purposes quickly became apparent).

A formal proposal to review the 1978 Foundation Course was put by the Centre for the Advancement of Learning and Teaching to the Standing Committee of the School of Humanities in November, 1977. (The word 'review' was chosen because it has fewer unfavourable connotations than the word 'evaluate'). That Committee accepted the proposal and set up a small committee to oversee the review. A member of the staff of the Centre for the Advancement of Learning and Teaching was made a member of that committee.

THE AIMS OF THE REVIEW

As its first task the Committee formulated a set of aims for the review. These were:

1. to provide information useful for the improvement of the course this year and in the future;
2. to compile an account of the teaching of an innovative course in the Humanities unusual among University courses;

3. to answer questions on certain aspects of the course posed by the Academic Committee of the University.

THE FIRST PLANNING DECISIONS

After settling the aims of the review, one of the first major decisions to be made was whether it would try to follow one of the 'standard' approaches to evaluation, a number of which are current in the literature, or whether it would disregard all theoretical models and be completely pragmatic and eclectic.

Some people have attempted to evaluate tertiary courses without any reference to the large volume of recent work in the subject. Indeed, some recent published work on the evaluation of tertiary courses has been written without reference to any of the theoretical work, perhaps, it seems, in ignorance of it.

There are a number of models in the literature:

The Tylerian Model, for example, requires the objectives of the course be specified very clearly, preferably in behavioural terms; the evaluation of the course then consists of the assessment of student performance in terms of the objectives. This model has some serious disadvantages; few people would regard it as adequate, although there are still some who believe that it is an appropriate model for the evaluation of tertiary courses. It is, of course, entirely concerned with ends or outcomes. It requires objective measurement of achievements. It does not concern itself with how the objectives are achieved, only with the extent to which they are achieved. Nor does it ensure that all the outcomes are actually measured.

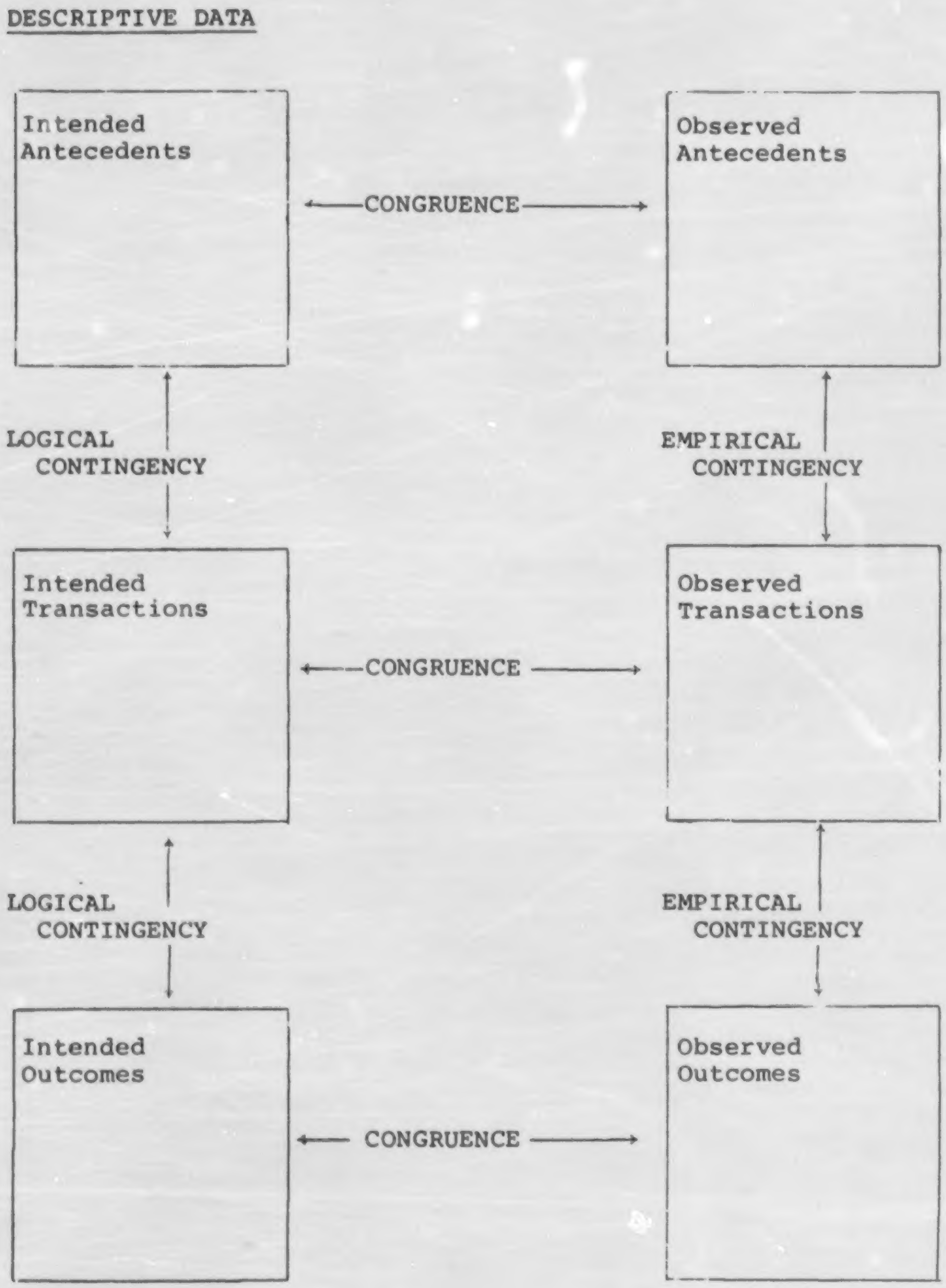
Another model that might be considered is that developed by Robert Stake (1967). Stake distinguishes between antecedent, transaction and outcome data. Antecedents are those conditions existing prior to the actual conduct of the course - relating to students, resources and so on. Transactions are those events, encounters and relationships which occur during the process of a course. Outcomes are the effects of the course, its impact on students, staff, material resources and so on, both short and long term.

The logical contingencies between the intended antecedents and transactions, and the intended transactions and outcomes, are looked at. The empirical contingencies between the observed antecedents, the observed transactions and the observed outcomes are also considered. The congruence between the intended course and the observed course is noted. From the descriptive data obtained about one course it is possible to make a comparison with absolute standards of excellence, or to make a relative comparison with other courses and to arrive at some judgment.

Another approach to evaluation which has come to prominence over the last few years is Illuminative Evaluation. Parlett and Hamilton (1972), who suggested the approach, wanted to discard the agricultural/botany paradigm which might have been appropriate in a research situation or which was attempted by some people using the Tylerian model of evaluation. Instead they adopted a social anthropology paradigm.

Parlett and Hamilton were primarily concerned with how a course operates and how it is influenced by the various situations in which it is applied. They wanted to know what the advantages and disadvantages were in the eyes of the participants. They were not just adopting a new

Figure 1. Stake's Model of Curriculum Evaluation


DESCRIPTIVE DATA
Intended Antecedents
CONGRUENCE
Observed Antecedents
LOGICAL CONTINGENCY
EMPIRICAL CONTINGENCY
Intended Transactions
CONGRUENCE
Observed Transactions
LOGICAL CONTINGENCY
EMPIRICAL CONTINGENCY
Intended Outcomes
CONGRUENCE
Observed Outcomes

methodology, they were attempting to obtain new understandings. They felt that, in their terms, an instructional system is not an abstract plan, but as it is implemented in an institution it assumes a different form. The learning milieu is infinitely variable. It is altered by, and it in turn alters, the course which is being implemented.

Their methods involve observation, followed by further enquiry and attempts at explanation. There is progressive focusing on important issues. Of course, there are problems with Illuminative Evaluation; it is, for example, very subjective.

The emphasis on this approach is not on decision making but on information gathering. The evaluator concentrates on process within the learning milieu rather than on outcomes derived from a specification of the instructional system.

Another model specifically developed with university courses has recently been suggested by Clift and Imprie (1977) of the Victoria University of Wellington in New Zealand. It places emphasis on cooperation with teaching staff in the application of systematic procedures with clear purposes leading to demonstrable results. It views evaluation as a learning situation.

An alternative to the use of one of these 'standard' models of evaluation was to develop a plan which was eclectic and pragmatic. This sort of planning would perhaps just begin with a series of questions.

What do we want to know about the course?
What are the questions to which we want answers?

What data do we need to obtain the answers to the questions?
In what ways can we obtain that data?
Where and from whom do we get them?
Who will collect the data?
When will the data be collected?
How, when, where, and by whom is the data going to be analysed?
To whom is the report going?
What form will the report take?
When is the reporting going to be done?

In planning the review of the course referred to above we adopted basically this sort of pragmatic method; for a variety of reasons none of the theoretical models appeared to fit our needs exactly. But it soon became clear that this was not all we were doing. We could not dismiss from our minds the insights that we had gained from many of the standard approaches to evaluation. They were guiding us along the pragmatic path. It was clear, too, that principles which underlay some of the theories or the theoretical models were also guiding us even in our most apparently pragmatic moments. In other words, what we were actually doing was to work through a series of simple questions in planning the evaluation, but answering the questions continually by reference to certain principles of procedure (the term is borrowed from Stenhouse (1975)).

Now with the benefit of hindsight, it appears that the principles of procedure which we were using were something like those set out below. These are clearly not all of the same order, and they may need considerable refinement.

Principles of Procedure

1. The objects of attention and the activities to be

undertaken will be selected with continual reference to the aims of the evaluation.

2. During the planning stage there will be continuous reference to theoretical models of evaluation.
3. Multiple methods of evaluation will be used wherever possible.
4. Multiple sources of information will be used wherever possible.
5. The evaluation will be conducted with the School rather than for the School - maintenance of cooperation with all staff and students will be given the highest priority.
6. Planning will ensure maximum usable information with minimum harrassment of staff and students.
7. Activities will be planned with a regard for the availability of staff and other resources.

It was with these principles guiding the decisions being made (although they were not then explicitly formulated) that we proceeded with the planning of the review. Firstly, we listed the questions to which we wanted answers. A small example of the sorts of lists we produced is shown in Table 1. These questions relate mainly to teaching arrangements.

TABLE 1.

SOME OF THE FIRST DRAFT OF QUESTIONS TO BE ASKED ABOUT THE COURSE

What actually occurs in the two-hour lecture plus discussion/activity time slots?
What time is spent in lectures; in medium sized groups; in small groups?
What is the nature of the lectures; of the medium sized groups; of the small groups?
What topics are covered in lectures; in groups?

What range of activities, deriving from one lecture, occurs in the groups?

What are the reactions of participating staff to the various activities?

What are the reactions of students to various activities?

What actually happens in tutorials?

Who or what determines the discussion topics?

What is the nature of the organisation in tutorials?

What skills are needed (and displayed) by staff in tutorials?

What skills are needed (and displayed) by students in tutorials?

What are the reactions of staff to tutorials?

What are the reactions of students to tutorials?

After considering a large number of questions we found that we were concentrating on certain focal points in the course. These included the two hour sessions which were called learning/teaching units, assignments, conduct of tutorials and so on. We then proceeded to fill in a document like that shown in Table 2, which set out the source of our data on these focal points, the methods by which we could obtain the data and the time at which we would want to obtain the data from the various sources.

TABLE 2.

PREPARING THE PLAN

FOCAL POINT	SOURCE	METHOD	TIME
1. LEARNING/ TEACHING	STUDENTS	QUESTIONNAIRE	END SEMESTER 1
	CALT STAFF	OBSERVATION	CONTINUOUS
	STAFF	INTERVIEW	END SEMESTER 1

TABLE 2.

FOCAL POINT	SOURCE	METHOD	TIME
2. ASSIGNMENTS (MARKING)	ASSIGNMENTS	STATISTICAL ANALYSIS OF MARKS	END OF EACH SECTION OF THE COURSE
	SCHOOL RECORDS	CONTENT ANALYSIS OF MARKERS' COMMENTS	END OF EACH SECTION OF THE COURSE
3.			

Having completed that schedule we summarised the information (that is, the planned activities) in a variety of ways. First we produced a summary of activities according to the methods being used, part of which is shown in Table 3. We also produced a timetable for the whole year - a plan of activity as shown in Table 4.

TABLE 3.

SUMMARY OF ACTIVITIES ACCORDING TO METHOD

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1. Staff surveys
    (a) All staff : perceptions of the Foundation Programme; its aims and purposes, its place in the School and the University.
    (b) Appropriate participating staff : views on each section of the course, its impact on students and their reaction.

TABLE 3.

(c) All participating staff : review of Foundation Programme as a whole, its impact on students and their reaction, and changes to be made.

2. Observation

All formal teaching activities : what happens, who participates, what topics are covered, etc., who leads.

3. Essay Test

All students : test of improvement in essay writing.

4. Student Surveys

(a) Random samples (i) expectations, interests, ambitions, reasons for enrolling.

(ii) review, perception of achievement, degree of expectations of F.P. met.

(b) Random samples : views of each section of the F.P.

(c) see 'Case Studies' below.

5. Diaries

Stratified samples : how time is spent, resources used.

6. Case studies

Selected diary keepers : individual progress.

7. Records and documents

(a) development of the F.P., etc.

(b) description of students - age, achievements, ability, etc.

(c) analysis of assessment results.

TABLE 4.

THE INTENDED PROGRAMME FOR THE YEAR

Week Beginning	Teaching Week	Staff Survey	Observation	Student Diary and Case Study	Essay Tests	Student Surveys
Feb 6		) 1	Periodically but especially where marked	Diaries: continuously throughout the year		
13		)				
20		)				
27	1.1	)			1	1
Mar 6	1.2			Case studies: from mid-semester 1		
13	1.3					
20	1.4					
27	1.5					
Apr 3	1.6					
10	1.7	2				2
17	1.8					
24	1.9					
May 1	1.10					
8	1.11	3				3
15						
22	1.12					
29	1.13					
June 5	1.14					
12	1.15	(4)				
19	1.16					
26						
July 3						
10						
17						
24	2.1					
31	2.2					
Aug 7	2.3					
14	2.4					
21	2.5					
28						
Sept 4	2.6	5				
11	2.7					4
18	2.8					
25	2.9					

TABLE 4.

Week Beginning	Teaching Week	Staff Survey	Observation	Student Diary and Case Study	Essay Tests	Student Surveys
Oct 2	2.10					
9	2.11					
16	2.12					
23	2.13					5
30	2.14	6,7			2	6
Nov 6	2.15					
13	2.16					
20		8				
27						
Dec 4						
11						
18						

Table 4 contains reference to later documents which explain each activity. For example, in the column 'Staff Survey', the numbers (No. 1 in the two weeks before the first teaching weeks, No. 2 in week seven of the first semester, No. 3 in week eleven of the first semester and so forth) are explained in a document on staff surveys which is represented in Table 5.

TABLE 5.
NOTES ON STAFF SURVEYS

Staff Surveys

No. 1. Who?

All staff in the School, with the exception of those joining this year.

What about?

Their perception of the aims of the University, the aims of the School, the aims of the Foundation Programme and its relationship to later courses in the School.

How?

Perhaps a request to write, say, a two page document, with an interview for those who do not respond.

TABLE 5.

When?

Before the start of semester 1.

Nos. 2-7. Who?

Lecturers involved, and a selection of teaching fellows.

What about?

Their views on the content, organisation, teaching methods, assessment procedures of the section of work just completed. Their perception of the impact of each on students, and reactions of students.

How?

Individual interview or open-ended questionnaire or group interview/discussion.

When?

After the end of each section. Weeks 1.7, 1.11, (1.15), 2.6, 2.14.

No. 8. Who?

All staff involved in the Foundation Programme.

What about?

Perception of the F.P. as a whole, its impact on students, and reactions of students.

How?

Questionnaire or interview.

When?

After the end of examining in semester 2.

So far the review is proceeding according to plan. There is one activity we would like to undertake when this review is completed. That is to review our own evaluation practice. This could be in the light of certain characteristics of evaluation plans which are outlined in the literature. For example, there is a classic distinction made between formative evaluation and summative evaluation. Where does our review stand on that dimension? To what extent is this review focused? To what extent is it portrayed? Is it Goal-Directed or is it Goal-Free? Is it pre-ordinate; is it responsive? A review of our own practice might also assist us to sharpen and refine the 'principles of procedure'.

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STAFF DEVELOPMENT: NEW VIEWPOINTS AND NEW DIRECTIONS

Norman C. Dennis

Institutions of higher education are now seriously being challenged to examine critically the quality of their operations, and to render themselves accountable both internally (to colleagues and the institutional authority) and externally (to the community at large). It is understandable, therefore, that staff development is generally seen to be an important vehicle for meeting this challenge to sustain a vigorous intellectual climate within which to encourage innovation, and to improve the quality of the teaching/learning process.

A major reason for our present concern over staff development emanates from the emergence of what has been designated a period of "steady-state staffing" (or no-growth). Ample reference to the current economic situation in tertiary institutions has been made by Hore (1977) and by various authors in the recent book The Future of Higher Education in Australia (ed. Hore, Linke & West, 1978). This "steady-state" phenomenon can lead to interesting speculations, and implications, for staff development. On the one hand it could mean stability, decreased mobility and consolidation, which are, perhaps, essential ingredients in sustaining worthwhile and innovative staff development activities. On the other hand, a stable staffing situation could produce staleness and stagnation of creative ability and a dulling of enthusiasm, initiative and innovativeness. We therefore require carefully planned and implemented staff development efforts to enable staff to retain their vitality, and their sensitivity and responsiveness to changing educational issues.

New talents and attitudes to meet the challenging demands of our students in changing circumstances will have to be generated from within the present staff.

HOW DO WE DEFINE STAFF DEVELOPMENT?

Any concept of staff development must be seen to emerge naturally from different assumptions and philosophies which are adopted to support such programmes. At this stage the intention is not to address the issue of the importance of staff development. Instead the primary purpose is to focus more clearly on, and articulate more precisely, the perspectives and assumptions that may have become obscured in our past operations.

Staff development is a complex enterprise. In the literature a distinction is often made by using different labels such as "staff development", "professional development" and "educational development". Gaff (1975) outlined three components of staff development, namely faculty development, instructional development and organizational development. Coles (1978), on the other hand, has suggested that staff development will only be understood if it is equated with curriculum development, and that staff development emerges as an outcome of the varied activities associated with course design and development. What is important, I believe, is that a change of label is not necessarily accompanied by an automatic change in direction or emphasis, or the adoption of a new set of assumptions. The traditional label "staff development" can be given inclusiveness of meaning so that it will connote concern for

- scholarly research within the staff member's discipline;
- improving the tertiary teacher's role in the instructional process, and the total educational

enterprise in which he is involved; and

- the students' needs and characteristics, and for improving learning conditions and settings for students.

In other words, by legitimately following a "developmental strategy", staff development can be made to operate as a continuous, on-going process: it will be flexible; it will attempt to change the attitudes of staff, to assist them in developing new skills and improving existing skills; and it will attempt to change their behaviour. It is unfortunate, however, that many concepts of staff development seem to give prominence to only two of the essential elements, namely the needs of the individual staff member and the expectations of the institution. There is an apparent disregard for the needs of students, for whom the development and change are, presumably, intended. In this regard, therefore, it seems reasonable to suggest that if staff development programmes cannot demonstrate how they contribute to achieving declared student goals, it would seem futile to spend time, effort and money on them.

HOW ARE CURRENT STAFF DEVELOPMENT PROGRAMMES PERCEIVED TO OPERATE?

- Staff development activities are seen as "things done for someone, by someone" (presumably by an expert staff developer). The content and setting for these activities are normally determined mainly by the staff development organisers.

- There is little staff participation in determining either what should be offered by way of content and learning experiences, or the format for such activities.

* Staff development activities are usually implemented for less competent and less experienced staff, and for those seen to be most in need of assistance. As such the arrangement appears to stigmatise some staff.

* Staff development activities have traditionally been known to address the more practical issues, and are organised as workshops, seminars, or courses. These activities have often been seen to be lacking in a deeper perception of the conceptual issues that are involved. As such they are perceived to be incompatible with staff needs, or less fulfilling and less stimulating.

WHAT SORT OF STIMULUS IS NEEDED? (NEW VIEWPOINTS)

This question could also be asked differently: what are the prerequisites for a successful and effective staff development programme? Or, what viewpoints do we need to adopt as the basis for a successful planning and implementation strategy? The suggestions which follow attempt to articulate more precisely some important principles and motivating factors, which most of us accept anyway but which are not reflected in many of our staff development activities.

1. Assessment of needs.
   The broad concept of staff development as personal, professional and organisational development demands the determination of the major types of needs, both individual (or personal) and institutional. Institutional needs are invariably reflected in policy statements of goals and purposes, and although institutions obviously have several purposes, teaching is of primary importance.

2. Needs will be different for different staff levels and career stages.
Programmes must therefore be planned to be flexible, to support individual and group activities, and to reflect expressed needs for diagnosing personal and professional competencies or weaknesses; to improve interpersonal skills; and to provide opportunities for involvement in (and, hopefully, a better understanding of) departmental decision-making and team-building. In other words, staff development programmes should not be programmes identified by others (for example, research and development units), something brought in and imposed on staff.

Needs ought therefore to be determined on the basis of at least three staffing levels:

(1) new, inexperienced: who have the knowledge and skills of their disciplines, and documented credentials, but who have limited applied experience and no experience within teaching and educational contexts;

(2) new, experienced: who are the scholars or practitioners, but who are new to teaching and the educational setting;

(3) established, experienced: who have the full complement of both knowledge and skills, and experience of working within an educational setting.

3. When programmes are needs-based, they will be primarily client-centred and client-identified. When staff make their own day-to-day assessments of what they are doing

that might be in need of change or modification, we have the basis for establishing staff development needs. Furthermore, we ought to accept the corollary to such an assumption, which is that staff are key change agents in bringing about curricular and organisational changes, as well as shifts in attitudes. Staff will not be innovative, and will not be changed by institutional decree; and it is hardly likely, also, that they will change by being told by experts. How then will reform, or change, or innovation gain acceptance? It is contended that staff will seriously and more willingly identify with educational reform if it has involved them personally.

4. Within the notion of viewing staff as potential change-agents resides a further belief that staff development activities will often receive the greatest impetus if they are seen to be "change-agent projects". By this I mean projects associated with "on-the-job problem solving". At the Western Australian Institute of Technology we have been convinced of the impact made by such an approach in a variety of development projects and would wholeheartedly support Coles (1978) in advocating the need for research and development personnel to work alongside teaching colleagues. In this way we could share some of the experiences of our colleagues and become more sensitised to the needs and realities of their work situations. In this way (probably arranged through secondments or joint appointments) research and development consultants, who give advice about instructional processes or about facilitating the tertiary teachers' role, could also experience at first-hand the problems of the classroom, the laboratory or the field. This is one way in which we could demonstrate intellectual leadership, and

thereby also establish credibility.

5. Staff development programmes should operate on a continuous basis throughout the year and not as sporadic events. They ought not first to be concerned with correcting deficiencies. They should positively emphasise growth and change. While change may be viewed as immediate and related to specific teaching behaviours, long-term growth and development in professional competencies hinges on attitudinal changes, and will be dependent upon:

    * involvement in personal learning;
    * the extent to which teaching staff are given responsibility for defining their own educational problems, for delineating their own needs, and receiving advice and assistance on their own terms;
    * reflective discussion and interaction with other teaching colleagues;
    * construction of a point of view about the teaching-learning process; and
    * the parallel development of a teaching repertoire that would support such a point of view.

WHITHER STAFF DEVELOPMENT? (NEW DIRECTIONS)

Specifying "how we go about doing it" may appear to be a tall order. However the task before us should be challenging and creative, and attainable within given contexts. What follows are suggestions for the type of staff development activities that might be promoted.

1. Induction courses for new inexperienced staff. (In a steady-state staffing situation the demand for courses

of this nature, aimed at equipping staff with a "survival kit", is likely to decrease markedly.) The most valuable follow-up activities to such courses are individual consultations in the staff member's teaching setting, with built-in opportunities for the individual to learn and develop skills for diagnosing, identifying, and solving problems within a course.

2. Institutional support and encouragement for staff to grow in professional competence. Some examples are:

    - the acquisition of higher degrees through study both locally and overseas;
    - formal accreditation of courses in education, aimed at better equipping the tertiary teacher to fulfil his role.

3. Local study leave, within an institution. It is envisaged that such a scheme could operate on the basis of the WAIT Mini-Fellowship Scheme, by which a staff member can apply for

    - time release of between 3-4 hours per week for one or two semesters; or
    - total release from teaching commitments for a full semester.

    The successful candidate would have submitted for approval a proposal outlining the nature of the educational investigation to be undertaken. Throughout the period of the project, a member of the R & D Unit works alongside the investigator as consultant and adviser.

4. Exchange Programmes. These could operate on an intrastate as well as an interstate basis.

Institutional policy ought to give priority to the kind of staff development programme which would arrange short-term exchanges for staff who wish to gain experience in another environment. R & D Units might themselves consider revitalising their operations by arrangement of inter-unit exchange programmes.

5. Encouragement and support of research activities. In addition to the teaching function the conduct of pure and applied research is a vital activity on many campuses. Obviously a wide range of developmental and investigatory activities can be subsumed under the umbrella of "research". The nature, description, depth and scope of such research activities undertaken by staff will no doubt also correspond with the degree of expertise and commitment they possess. At least equal consideration ought to be given to research related to teaching and other forms of research. Furthermore, in considering research activities for staff development purposes, preference should be given to those which increase the participants' understanding of the professional area for which they are preparing students (Lonsdale, 1976).

6. Industrial exchange and community involvement. Exchanges similar to those proposed between institutions should be possible to permit staff to work on a community-based project, or in an industrial/professional setting. Here again the most obvious benefit is the degree of relevance and reality that ought to emerge between the courses (and the teaching associated with these) and actual situations at the workface.

7. Course design and evaluation of teaching. The

individual requests from staff for assistance in this direction represent yet another opportunity for tailoring a staff development programme to individual needs. Benefits likely to accrue to the staff member include a greater awareness of the need to monitor how things are going; skills at diagnosing and identifying areas of concern; professional concern and empathy; and an acceptance of the need for collaborative planning with students regarding the nature of learning experiences to be provided, assessment of performance and achievement, workloads, and so on.

It is also likely that the staff member will explore the learning and coping skills of his students. This appears to be a much-neglected area within staff development programmes. The almost total concern for helping staff improve their teaching has left little time for consideration of the problems that students might be experiencing. And yet for students to derive the maximum benefit from even the most traditional diet of lectures, tutorials and practical sessions (let alone innovative procedures) they ought to possess adequate learning skills. Any staff development exercise involving course design and evaluation ought to provide opportunities to explore students' characteristics and their learning and study skills.

8. Staff development on a departmental basis. A staff development programme which is based on the peculiar needs and requirements of individual departments would be a useful departure from the traditional model.

Department-initiated action is also more likely to have official support and influence. Furthermore, a departmental platform often provides a more acceptable

> opportunity to promote team teaching, to encourage "sit-ins" on the teaching of colleagues, and to foster critical and constructive interchanges between closely related subject - speciality groups. And within departmental settings there is the additional advantage of using some of the teaching staff as consultants, or experts, along with the R & D Unit consultant. The success (and satisfaction) achieved by colleagues is often an extremely powerful motivating factor if one is seeking to convince staff of the worthwhileness of staff development efforts.

In conclusion, all staff development efforts ought to aim at enabling staff to improve and sustain their professional competence. And because we work in an educational milieu of constant change it is not difficult to appreciate that competence is a perishable commodity: skills that proved initially successful could easily degenerate and become obsolete. Our staff development programmes should be a protection plan or policy against such obsolescence. However, since development generally means change, the development of programmes within an organisation cannot really be successful unless the organisation is also developing and responsive to change. And within departments our best efforts at providing viable staff development programmes will fail if heads of departments do not visibly support the efforts of their teaching staff to learn and to grow in professional competence.

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THE ENHANCEMENT OF LECTURER SELF-CONFIDENCE

H.E. Stanton

One of the problems most frequently raised by academics in their consultations with staff development personnel is the anxiety they feel about the formal lecturing situation. King's (1973) study of staff at eighteen United Kingdom universities has attested to the widespread nature of this problem, while Ellis & Jones (1974) have spelled out how such anxiety affects the academic's lecturing methods. In an attempt to cope with self-doubt, he uses a number of undesirable techniques, such as ritualisation and distortion, which interfere with student learning. Training in specific lecturing skills, as Harding & Sayer (1975) have pointed out, is unlikely to rectify this problem, for the underlying cause of the poor techniques remains untouched. They maintain that what is needed in addition to such training is providing guidance to staff on ways of coping with their anxieties and self-doubts. The assumption underlying their suggestion is that amelioration of the personal problem will be reflected in improved lecturing performance.

The use of therapeutic techniques - for this is really what Harding & Sayer are recommending - is normally not considered in an educational context, yet teaching and therapy have much in common (Stanton, 1978a). In both cases the learner, be he student or patient, is being helped to change in ways he desires. Successful learning and successful healing are largely a function of a cooperative attitude between the people involved so that they can move toward their mutually desired goals. Using a therapeutic approach, then, to help academics cope more successfully with the anxiety engendered by the formal lecture situation is not really such an outlandish notion. In fact, in the studies reported in this article, student teachers, teachers, and lecturers were enthusiastic about the benefits they gained from the treatment sessions and, in particular, were delighted with the rapid increase of confidence they experienced.

The Therapeutic Treatment

The particular treatment method used was one embodying three elements: relaxation, suggestion, and imagery. Relaxation has long been used as an anxiety relief mechanism (e.g. Jacobson, 1938; Meares, 1971; Wolpe, 1969) for the two states would seem to be mutually incompatible. There are many ways of achieving deep relaxation, but possibly the most consistently successful is some form of hypnotic induction which makes it easy for the subject to let go and drift into a very calm and peaceful state. Such an induction not only helps the subject to relax, but also enables him more readily to accept suggestion. It would appear that as one "lets go", the normal critical "watchdog" faculty of the mind becomes less marked, permitting acceptable suggestions to be more easily absorbed. "Acceptable" is the key word here, for the subject is easily able to reject suggestions to which he objects. In the studies described in this article, emphasis was placed upon the subject feeling more energetic, healthier, coping with problems effortlessly and easily, becoming increasingly calm and relaxed, experiencing feelings of personal well-being, and being able to concentrate more effectively. In particular, suggestions pertaining to self-confidence and a person's power to change himself were stressed. A script embodying these ideas may be found in Stanton (1975a).

The third element, that of imagery, involved subjects vividly imagining themselves in a classroom or lecture room situation. Once they were able to do this, they visualised themselves performing in the way they wanted to perform - calm, confident, effective. It has been suggested (Bloodworth, 1975; Maltz, 1967) that such success imagery, seeing oneself the way one wants to be, is the most effective way of changing behaviour.

A combination of the three elements, relaxation, suggestion and imagery (RSI) defines the therapeutic approach used with teachers and lecturers to help them cope with anxiety and self-doubt. Basically, their problem was seen as a lack of self-confidence, and it was assumed that if the treatment method could assist them to feel more confident about themselves as teachers, anxiety would decrease and their classroom performance improve. Considerable evidence does exist in the therapeutic literature that the approach outlined above, often labelled "hypnosis", can be extremely successful in changing people's behaviour. Experiments conducted by the present author with weight loss (Stanton, 1975b), insomnia (Stanton, 1975c), confidence building (Stanton 1975d, 1977a), test anxiety (Stanton, 1977b), and smoking (1978b) have all provided confirmation of this view.

Studies with Student Teachers

The first study using the RSI technique to counter anxiety about teaching was conducted with Diploma of Education students who were facing their first round of practice teaching (Stanton, 1978c). Anxiety among them was high and eighteen volunteers experienced four half-hour treatments held at weekly intervals. Before these sessions commenced, students completed a self-report confidence scale (see Appendix I).

Choice of this measuring instrument was influenced by the work of Allport (1960) who maintained that the best way to find out what a person is like is to ask him. Combs & Snygg

(1959) have also stressed the same point, that it is a person's perception of his personality that is more important than some outside "objective" measure. If a person feels confident, he is likely to behave in a confident manner, and the Scale used in these studies was intended to measure this self perception.

After the four sessions had been completed the Confidence Scale was re-administered, and the results indicated that 13 of the 18 students had increased scores. These ranged from one point on the scale to three points ($p<0.01$, Wilcoxon signed ranks test).

A second study (Stanton, 1978c) also used Diploma of Education students as subjects. Twenty pairs were selected on the basis of Confidence Scale scores, and one member of each pair was allocated at random to an experimental group which experienced the four treatment sessions. His partner was allocated to a control group condition. Pre- and post-experiment Confidence Scale scores showed that although five of the experimental group remained stable, 15 recorded improvement. Of the control group, four recorded a higher score, four a lower score, and 12 remained stable ($p<0.002$, Mann-Whitney U-test).

Studies with Tertiary Level Lecturers

The first of these studies (Stanton, 1978c) generalised from the earlier work done with student teachers. Twenty subjects, teaching within either a university or a college of advanced education, were matched in terms of their pre-treatment Confidence Scale scores and allocated at random to experimental and control groups. Once again, the majority of subjects who experienced the therapeutic treatment, eight out of ten, recorded improvement in their self-confidence level. These results were not matched by those of the control group (seven stable, two improvements, one decline), the difference between them being quite significant ($p<0.02$, Mann-Whitney U-test).

This study, together with the two student teacher studies, did seem to establish the effectiveness of the RSI technique in helping subjects feel more confident about themselves in a teaching situation. However the question of whether this confidence was reflected in more effective lecturing behaviour had not been answered. Therefore an additional measure was employed with 40 tertiary level lecturers. Students taught by these lecturers were asked to evaluate them before and after the experimental treatment. Although it is debatable whether students are able to provide an accurate evaluation of the teaching they receive, the issue in the present context concerns their perception. Students are the only ones who can provide information on how they experience the teaching to which they are exposed, and it has been suggested that it is this perception which determines how well they will learn (Mager, 1968). If students rate a particular lecturer at the same level both before and after his exposure to RSI, this would suggest that his increased confidence was not reflected in improved teaching, and that the RSI treatment was ineffective in actually modifying his behaviour. Although other methods of measuring teaching performance could have been employed, empirical evidence would suggest student evaluation as the best source of information available (Austin & Lee, 1967; Costin et al., 1971; Hildebrand et al., 1971). A simple ten point scale was used, both to preserve compatibility with the confidence measure and also because only an overall assessment was required from students (see Appendix II). There was no attempt made to identify ways in which the experimental subjects may have improved, only whether observable changes in lecturing performance had occurred.

Once again the self-reported confidence of the experimental group, randomly assigned on the basis of matched pairs as in the previous studies, was significantly higher than that of the control group ($t = 3.20$, $df = 19$, $p<0.01$). This increased self-confidence level seemed also to be reflected in improved teaching performance for the RSI group, who were rated significantly higher after treatment than the control group ($t = 2.60$, $df = 19$, $p<0.02$). According to the student evaluation, 11 of the 20 experimental group subjects improved their teaching, with no member of this group being rated lower than on the pre-treatment evaluation. For the control subjects, on the post-evaluation, four were rated higher and three lower. The students making the ratings had no knowledge of the experiment for their cooperation was sought as part of a general evaluation of teaching programme. Scores on the Confidence Scale and Student Evaluation Scale were positively related (Pearson product-moment correlation coefficient $r = 0.74$ for pre-experiment scores and 0.80 for post-experiment scores). It would seem reasonable, then, to conclude that students' evaluation of their lecturers' teaching performance agreed quite well with the lecturers' subjective estimate of their own self-confidence level.

The Present Study

The latest in the series of investigations exploring the applicability of the RSI technique to "lecturer development" involved the use of the Tennessee Self-Concept Scale (Fitts, 1965) instead of the instrument used to measure self-confidence in the earlier work. It was felt that if another measure produced comparable results the effectiveness of the treatment method would gain additional support. Choice of the Tennessee Self-Concept Scale was made on the basis of its reliability (with reported coefficients falling mainly in the 0.80 - 0.90 range), and the existence of some evidence supporting its validity (Knapp, undated; Suinn, 1972). Like other paper and pencil personality tests, the Tennessee Self-Concept Scale can lay no claims to excellence as a measuring instrument but it does seem to have enjoyed sufficiently wide usage to enable comparisons to be made. It provides a well standardised, multi-dimensional description of the self-concept, which would seem to reflect the overall level of self-esteem or confidence of the respondent. As Fitt puts it:

> Persons with high scores tend to like themselves, feel they are persons of worth and value, have confidence in themselves, and act accordingly. People with low scores are doubtful about their own worth, see themselves as undesirable; often feel anxious, depressed and unhappy; and have little faith and confidence in themselves.

From a group of 167 tertiary level lecturers, ten pairs were selected. The members of each pair, who had the same score on the Tennessee Self-Concept Scale, were allocated at random to an experimental group which experienced three half-hour RSI treatments spread over three weeks and a control group which spent the same amount of time discussing ways of reducing anxiety in the formal lecturing situation. Further administrations of the Tennessee Scale took place at the end of the three week period and six months after completion of the study. The results were as follows:

MEAN SCORES AND STANDARD DEVIATIONS FOR TWO GROUPS OF TERTIARY LEVEL LECTURERS ON THE TENNESSEE SELF-CONCEPT SCALE (N = 20)

	Pre-Test	Immediate Post-Test	Delayed Post-Test
Experimental Group	309.5 (27.2)	340.5 (20.1)	340.7 (19.2)
Control Group	309.5 (27.2)	310.5 (26.3)	310.7 (26.2)

NOTE: The higher the score, the more positive the self-concept.

The immediate post-experiment score of the RSI treatment group was significantly higher than that of the control group ($t = 4.19$, $df = 9$, $p<0.01$) and that superiority remained constant on the six-month follow-up test. A comparable result eventuated when student evaluationsof their lecturers, as shown below,were considered.

MEAN SCORES AND STANDARD DEVIATIONS FOR TWO GROUPS OF TERTIARY LEVEL LECTURERS ON THE STUDENT EVALUATION OF TEACHING SCALE (N = 20)

	Pre-Test	Immediate Post-Test	Delayed Post-Test
Experimental Group	5.1 (1.5)	6.0 (1.5)	6.1 (1.4)
Control Group	5.3 (1.5)	5.2 (1.4)	5.3 (1.5)

NOTE: The higher the score, the better the perceived performance.

Again the scores of the experimental group were significantly higher on both the immediate test ($t = 4.0$, $df = 9$, $p<0.01$) and the delayed test ($t = 3.26$, $df = 9$, $p<0.01$).

Discussion

The results of the study described above provide further confirmation that the RSI treatment is a successful means of improving both lecturer self-confidence and teaching performance. Use of a different confidence measuring instrument, the Tennessee Self-Concept Scale, from that used in previous studies made no difference to the experimental results, nor did reduction of the number of treatment sessions from four to three. When it is considered that the lecturers in this study spent only one and a half hours to achieve the gains they did, the power of the therapeutic treatment is apparent.

Its applicability within the context of higher education would seem to be considerable, particularly as taped inductions, suggestions and imagery guidance are quite feasible. The new study reported in this article involved "live" presentation but earlier studies used audiotape. Thus staff development personnel wishing to use the RSI technique would not need to be expert therapists themselves. Tapes, recorded by people used to working in a therapeutic context, could be made widely available to academics wishing to make use of them.

Particularly pleasing in the present study was the maintenance over time of both the self-confidence gains and the improved teaching performance. Often, immediate post-experimental results seem to suggest that great improvement has been made, and if no long term follow-up is used it is assumed such gains are enduring. Yet on many occasions experimental treatments are very short-lived, and later measures indicate a reversion to the lower standard of functioning. That such was not the case in the present study holds promise for the relaxation-suggestion-imagery treatment method becoming an important tool in the improvement of academics' lecturing performance.

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APPENDIX I

CONFIDENCE SCALE

INSTRUCTIONS:

Each of us has a picture of ourself as a person, usually reflected in terms of common personality characteristics. The scale set out below is an attempt to translate one such characteristic into measurable terms. What we would like you to do is to circle the number on the scale which you feel would provide the best description of your level of confidence about yourself as a lecturer.

For example, you may feel that the statement: "I have complete confidence in myself as a teacher" describes you very well, so that in this case you would circle 10. Alternatively, you may feel that you are neither "completely confident" nor "completely lacking in confidence", but that you are closer to the former description than the latter. In this case you might circle 7 or 8. Try to be as frank as possible for there are no right or wrong descriptions.

1 2 3 4 5 6 7 8 9 10

I have absolutely no confidence in myself as a lecturer	I have complete confidence in myself as a lecturer

APPENDIX II

STUDENT EVALUATION OF TEACHING SCALE

INSTRUCTIONS

Consider your lecturer ....(name inserted here). Place a circle around the number on the scale below which you feel best represents your evaluation of the quality of his teaching performance. For example, if you feel he is a superb teacher, you would circle the number 10. If you feel he is just a little better than average you would circle 6. Conversely, if you feel he is a rather poor teacher you would circle 2 or 3. Your name should not appear on this evaluation form and your honest opinion would be appreciated.

0 1 2 3 4 5 6 7 8 9 10

His teaching performance is extremely poor	His teaching performance is really excellent

THE NEEDS AND PROBLEMS OF PART TIME STUDENTS AND THE ACCOUNTABILITY OF ADMINISTRATIVE AND ACADEMIC STAFF

Jason L. Brown

Part-time internal students appear to be a much maligned and much ignored group within the tertiary education sector. The dearth of information on a national level is surprising considering the number of part time students involved in tertiary education.

Within the framework of accountability in education, the responsibility for the needs and problems of part time students has yet to be fully recognised, let alone acted on. As the relevance of vocationalism in education and institutional accountability is increasingly recognised at all levels, it is the appropriate time to extend academic and administrative accountability to and for part time students, their problems and needs.

THE PART TIME STUDENT

The significance of the size, composition and impact of the internal part time student population should not be underestimated. As Table I indicates, more than 32% of all internal students are studying part time. Not only are they a considerable percentage of the student population, but they spend a considerably larger contact time (in total span of years) with their institution.

TABLE I

INTERNAL STUDENTS BY TYPE OF ENROLMENT (PRELIMINARY), 1977

	FULL TIME	PART TIME	TOTAL
Universities	102,901	45,827	148,728
C.A.E.'s	84,896	44,462	129,358
Total	187,797	90,289	278,086

(Source: Australian Bureau of Statistics.
Ref. No's. 13.13, 13.6.)

Holding employment characterises the part time student. As Table II illustrates, part time students are employed across the whole range of employment areas. In this way they are representative of a major segment of the community that otherwise would not be present in the tertiary education field.

TABLE II

EMPLOYER CATEGORY (SAIT, NSWIT, QIT)

TYPE OF EMPLOYER	SAIT	NSWIT	QIT
Government	44%	29.7%	55%
Statutory Authority/ Commission	11%	9.4%	11%
Industrial	20%	22 %	34%
anking/Finance	11%	5.9%	
tailing/Commerce	10%	26.8%	
ther	4%	6.1%	

Aside from the obvious area of employment part time students differ from full time students in a number of ways. Meddleton (1965, in Gosling 1976: 12), investigating Arts part time students at the University of Queensland found their average age to be seven years greater than that of full time students. Similarly at the N.S.W. Institute of Technology (Senior Part Time Students Survey, 1977) the average age of part time students was found to be 25.8 years, five years greater than for full time students. Familial obligations also help characterise the part time student. Meddleton (see Gosling, 1976: 12) found that 50% of a sample of 500 students were married, with 38% having children. At NSWIT 45.9% were found to be married with 36.4% having children (Appendix I, A).

Because of their employment, experiential and familial backgrounds, part time students have specific needs and problems not suffered by full time students. In the past, the focus has mainly been on the area of attrition and length of time needed for graduation, rather than on the problems causing these symptoms, giving an inordinately pessimistic view of the viability of part time study.

BENEFIT/LOSS OF PART TIME STUDY

The greatest administrative problem associated with part time students is the wastage rate. The Martin Committee (1964) believed that part time study was in general an unsatisfactory and expensive form of University education, and suggested the expansion of grants to reduce the number of part time students. What evidence exists gives a grim picture of the attrition of part time students when compared with full time students, of whom 37.3% completed their course in minimum time and 63.9% graduated after the same seven year span as the 29% of part time students. Nevertheless a variety of institutional problems are associated with this high attrition rate, and to balance this part time students present both tangible and intangible benefits to their institution and community as a result of their presence in tertiary education.

TABLE III

PART TIME ENTRANTS (1961) IN ARTS AND ECONOMIC FACULTIES, UNIVERSITIES

	MEN	WOMEN	TOTAL
Number graduated	32.5%	18.6%	29.0%
Number discontinued	57.8%	76.2%	62.5%
Number continuing p/t	9.1%	4.9%	8.0%
Number continuing f/t	0.6%	0.2%	0.5%
Nil subjects failed	14.1%	11.9%	13.6%
One subject failed	5.7%	4.2%	5.3%
Two subjects failed	5.2%	2.1%	4.4%
Three subjects failed	3.3%	0.5%	2.6%
Four or more subjects failed	4.2%	n.a.	3.2%

(Source: The 1961 Study, Department of Education and A.V.C.C., Canberra, 1972).

To balance the higher cost of part time education it should be noted that part time students use the fixed resources of buildings and facilities for the marginal cost of only the recurrent resources of lecturing staff and materials used in instruction. An appropriate ratio of full time to part time hours could thus be established for any institution based on the benefit of extra resource usage against recurrent costs per hour of tuition.

On a more general level part time students, unlike full time students, make economic input into the community during the course of study. Similarly, while paying taxes of general benefit to the whole community, they do not represent the drain on resources that those on grants or scholarships represent. The community is not only benefiting at this level but also from the added expertise being more immediately brought to bear on the student's area of employment.

At the institutional/course level part time students may contribute substantially to the development of a course. Expertise learnt in the field may be shared with both lecturers and fellow students. Further, innovations developed in the institution may find access to industry and commerce through the working student, and industrial/commercial developments may be polished and developed on being brought to the institution by the part time student.

These economic considerations must take second place, however, to the educational issues. The greatest point in favour of part time education is that it is a means of access to tertiary education. For many it is the only means of access to tertiary education, and as such deserves increased support and consideration.

In a recent survey at the New South Wales Institute of Technology, 46% of part time students said that they would choose to study full time if they could, and of those who said they would not, 19.8% claimed that they could not afford full time study. Overall, 60% chose to study part time for economic reasons, while 51.9% had employers who insisted on part time study (Appendix I, B, C, D.). In a similar survey at the Queensland Institute of Technology (QIT Part Time Survey Interim Report, n = 168) 34% were directed to undertake part time study by their employers. It would seem that not only advancement in employment, but for some the very holding of employment is dependent on access to part time education.

Aside from economic constraints there are many other reasons why students choose part time study. In the NSWIT survey

28.4% were studying part time to combine experience with study, and 14.1% chose part time study regardless of other considerations (Appendix, I, B. D.). It is indicative that many part time students realise the benefits to be derived from combining work and study.

The importance of provision for part time study cannot be over-estimated. It has direct and indirect benefit to both the institution and community, and at the personal level may be the only means of access to tertiary education. Yet part time students face a great number of problems of which the high attrition rate is but a symptom, and it is the aim of this paper to delineate those problems that are institutional and can be seen as the responsibility of academic and administrative staff, with the view to indicating their accountability to and for part time students and their needs.

THE PROBLEMS

The greatest problem of part time students ia a general one, fatigue. A problem to be expected as, besides study, a 35 hour working week is often expected of them. In the QIT Survey, 72% of students felt that fatigue adversely affected the quality of their study more than a little. Similarly at SAIT (Gosling, 1976: 26) 58% claimed that fatigue adversely affected their study more than a little. At NSWIT (Appendix I, I) 37.2% saw it as their most important personal problem and 25% saw it as their second most difficult personal problem. Besides generally affecting performance, fatigue appears specifically to affect the attrition rate: at SAIT (Gosling, 1976: 40) 14% saw it as the major factor and 50% as a contributing factor in withdrawing from a subject. Similarly at QIT, 57% saw fatigue as a contributing factor to withdrawal from a subject.

A variety of problems are also associated with academic aspects of the course, both with content and staff. Part time students a-pear to have considerable problems with the apparent lack of planning of courses expected to meet their needs in terms of time and employment constraints. Coinciding assignment demands in several subjects appeared to be the major problem for part time students at NSWIT, with 46.3% listing it as their most important academic problem and 25.8% as the second most important academic problem (Appendix I, G.). In addition, 27.1% suggested better assignment coordination between lecturers as the best way of solving academic problems (Appendix I, H.). Similarly at QIT, 57% felt that the disproportionate demands of subjects adversely affected their study more than a little.

Assignment demands are also related to the employment implications ofpart time study. At SAIT peak work periods conflicting with assignment demands affected 55% more than a little, while 16% saw it as the major factor and 40% saw it as a contributing factor for withdrawal from a subject (Gosling, 1976: 26, 40). At QIT, 61% felt that peak work periods conflicting with course demands affected their study more than a little.

Academic staff themselves are seen by many part time students as a problem. At NSWIT poor lecturers were rated by 21.1% as the most important academic problem, and 21.5% saw them as the second most important academic problem; 27.6% suggested better lecturers as the best way of solving academic problems (Appendix I, G, H.). Anderson (see Gosling, 1976: 13) in his 1967 survey at the University of Western Australia reported that 39% saw inadequate lecturing and tutoring as a problem. Related to this are Gosling's (1976: 40) findings at SAIT that 14% saw difficulty in understanding subject presentation as the major factor and 24% saw it as a contributing factor in withdrawing from a subject.

Lack of contact and access to lecturers is also seen as a problem by part time students. At SAIT 30% were more than a little affected by poor contact, and 1% saw it as a major factor and 19% as a contributing factor in withdrawal from a subject (Gosling, 1976: 26, 40). At NSWIT 7.7% saw it as the most important academic problem and 15.7% saw it as the second most important academic problem, while 6.8% saw better access to lecturers as the solution to academic problems (Appendix I, G, H.).

Course content, particularly in terms of work load, is also seen as a problem. Of the students at SAIT 24% saw workload as the major factor and 40% as a contributing factor for withdrawal from a subject (Gosling, 1976: 40). Anderson (see Gosling, 1976: 13) found that at UWA 62% saw insufficient time to study as a problem. And at QIT 57% claimed that a subject's heavy workload was a contributing factor for withdrawal. In the NSWIT survey 23.1% believed that courses should be more relevant to real life (Appendix I, H.).

A number of administrative problems are also pointed to by part time students, the chief of which is course timetabling. At NSWIT 2.9% saw three hour blocks as the most important academic problem and 2.5% saw it as the second most important; 4.5% suggested shorter lectures as the best way of improving academic problems (Appendix I, G, H.). At SAIT, 12% saw it as affecting their studies more than a little (Gosling, 1976: 26). At NSWIT 4.4% listed class timetable clashes as the most important academic problem and 6.1% as the second most important (Appendix, I.G.). At SAIT 12%

were affected adversely more than a little and 5% saw it as the major factor and 10% as a contributing factor for withdrawal in a subject (Gosling, 1976: 26, 40).

Library access and facilities are another set of institutional problems of special interest to part time students. At NSWIT 8.4% of students found library hours unsatisfactory and 6.5% suggested better library facilities as a way of solving academic problems (Appendix I, F, H.). At SAIT 38% felt access problems adversely affected their study more than a little, while the provision of library facilities was judged by 30% as affecting their studies more than a little; 1% saw it as the major factor and 28% saw it as a contributing factor in withdrawal from a subject (Gosling, 1976: 26, 40). At UWA 54% saw inadequate library facilities as a problem (Gosling, 1976: 13).

A variety of other facilities and their access may also present problems for part time students. At NSWIT 13.3% of the students found the times for the computer interface room inconvenient, 33.5% found the times for counselling inconvenient and 15% found the times for student enquiries inconvenient (Appendix I, F).

On a more qualitative level, part time students express a wide range of problems. They complain of, for example, lack of understanding of their work commitments by lecturers; irrelevance of course material to "real life" situations; course orientation to full time needs with the part time course being only half a full time course; problems with day release fitting the institution's timetable; gaining "industrial experience"; and catering facilities (from Proceedings of Part Time and External Students Conference, Launceston, Tasmania, April 1977).

Finally the part time student may be the worst hit victim of change in a tertiary institution. The number of years over which a course may be spread makes the part time student particularly vulnerable to changes in course structure and the phasing out of subjects. This is particularly true where changes in the full time course are automatically applied to the part time course without regard for the consequences. And as with the other problems and needs of part time students outlined above, the prime responsibility for meeting these needs rests with the institution.

ACCOUNTABILITY OF ACADEMIC AND ADMINISTRATIVE STAFF

In making provision for courses of part time study institutions must take responsibility for these courses. Institutions have obligations to all students who undertake their courses and in particular to those whose needs they may not be adequately satisfying.

Administrative staff can be seen to be accountable to students enrolled in their institution if the facilities are failing to meet the needs of those students. And it would appear that, on the limited available evidence, some needs are not being met for a number of part time students. Overall course scheduling is a problem for some students, as are related issues such as library hours and access to other facilities. As time is one of the major constraints of part time study the onus is on the administration of the institution to cater specifically for this need. Coupled with the general problem of fatigue among part time students and the relative freedom of full time students it would seem reasonable that in institutions with moderately large numbers of part time students the hours of facilities be geared more appropriately to the needs of such students.

At the academic level responsibility must be taken for planning courses specifically designed for part time students. Greater attention must be paid to a number of relationships:

1. Employment and course content: In a vocational part time course the responsibility lies with academic staff to be aware of changes in emphasis in related employment areas. The content of the course should endeavour to anticipate, reflect and provide for the educational/employment needs of those undertaking the course, bearing a real relationship to the needs of industry and commerce without being controlled solely by the wishes of related professional bodies.

2. Employment and Assignment demands: Academic staff must keep aware of such work commitments as increased "end of financial year" workloads and pre-Christmas production rushes when planning high assignment loading, and through consultation with the students draw up appropriate assignment schedules.

3. Presentation and level of student expertise: Two areas need to be taken into account. Firstly, many part time students are returning to study after some span of time and need consultation in terms of type of presentation. Further allowance is needed for the learning of lost study skills in approaching course content. Secondly, many students bring with them a wealth of employment experience that can prove of benefit to the course as a whole but may also make them prone to disenchantment with the course and its standards. These factors need emphasis in a course of

vocational part time study.

4. Shortage of time and availability of Lecturer contact: The part time students' shortest commodity is time, and the responsibility lies with staff to make themselves available to part time students who may not have flexibility of timing due to work commitments.

5. Shortage of time and access to resources for assignments: Staff must also ensure that access is available to resources that may not ordinarily be available to part time students due to their timetables; particularly, emphasis can be placed on access to audio-visual aids and equipment both for study and seminar preparation.

All of the problems discussed above make accessability to courses at the tertiary level difficult for part time students. It must be recognised that a vast number of personal and employment problems are associated with part time study, quite apart from those specifically linked with the institution. Nevertheless the academic and administrative staff must be seen to be accountable to their part time students and for their various needs. Accessability for this large and increasing number of students is dependent on institutions being able to meet their particular needs.

REFERENCE

Gosling, F.W.H. Part Time Students at SAIT, 1976. South Australian Institute of Technology, Adelaide, 1976.

APPENDIX I

INFORMATION FROM NEW SOUTH WALES INSTITUTE OF TECHNOLOGY

SENIOR PART TIME SURVEY, 1977

			Number of Students	Adjusted %
A.	MARITAL STATUS			
		Single	450	54.1
		Married/Co-habiting	382	45.9
B.	REASONS FOR STUDYING PART TIME			
		Economic reasons	525	60.0
		Experience combined with study	249	28.4
		No full time course available	22	2.5
		Employer prefers PT study	21	2.4
		Preference	23	2.6
		Did not gain admission for full time study	5	0.6
		Other	31	3.5
C.	CHOICE OF METHOD OF STUDY IF POSSIBLE			
		Full time	383	46.3
		Part time	288	34.0
		Undecided	157	19.0
D.	REASONS FOR CHOICE			
	Full time/undecided	Finish course sooner	176	23.2
		More time	175	32.1
		Easier	14	1.8
	Undecided	No difference	13	1.7
		Don't know	11	1.5
	No/Undecided	Can't afford full time	150	19.8
		Want experience	107	14.1
		Preference	42	5.5
		Nearly finished	8	1.0
	Other	-	63	8.3
E.	EMPLOYERS INSIST ON PART TIME STUDY			
		YES	427	51.9
		NO	396	48.1
F.	CONVENIENCE OF OPENING HOURS			
	Library	YES	384	91.6
		NO	35	8.4

		Number of Students	Adjusted %
F. CONVENIENCE OF OPENING HOURS (contd)			
Computer Interface	YES	396	86.7
	NO	61	13.3
Student Enquiries	YES	33	8.5
	NO	55	1.5
Counselling Service	YES	171	66.5
	NO	86	33.5
(Above figures for those who use Service)			
G.(i) MOST DIFFICULT ACADEMIC PROBLEM			
Class timetable clashes		37	4.4
Coinciding assignment demands in several subjects		387	46.3
Poor access to library facilities (closed reserves books etc.)		37	4.4
Poor lecturers/Tutors/Instructors		176	21.1
Poor contact with Lecturers/Tutors/Instructors		64	7.7
Three hour teaching blocks		24	2.9
Other		67	8.0
Missing		44	5.2
G(ii) SECOND MOST DIFFICULT ACADEMIC PROBLEM			
Class timetable clashes		51	6.1
Coinciding assignment demands in several subjects		199	23.8
Poor access to library facilities (closed reserve books etc.)		61	7.3
Poor lecturers/tutors/instructors		180	21.5
Poor contact with lecturers/tutors/instructors		131	15.7
Three hour teaching blocks		63	7.5
Other		54	6.5
Missing		97	11.5
H.(i) SUGGESTION FOR COURSE IMPROVEMENT			
Better (assignment) co-ordination between lecturers		178	27.1
Better lecturers		181	27.6
Better access to lecturers		45	6.8
Improved library facilities		43	6.5
Lighter workload		18	2.7
Better access to computer facilities		12	1.8
Better timetabling of classes		10	1.5
Other		170	26.0

	Number of Students	Adjusted %
H(ii) TO IMPROVE QUALITY OF PERFORMANCE		
Courses should be more relevant (related to real life)	82	23.1
Employ better lecturers	20	5.6
Reduce workload	18	5.1
Shorter lectures	16	4.5
Hand out prepared lecture notes	14	3.9
Improve physical facilities	14	3.9
Better course content	11	3.1
Scrap Union fees	9	2.5
Better preplanning of course work by lecturers	9	2.5
Other	162	45.8
I. STUDY AREAS OF OVERALL SAMPLE		
a) Architecture & Building	111	13.3
b) Business Studies	397	47.5
c) Engineering	246	29.5
d) Humanities & Social Sciences	11	1.3
e) Maths & Computing Sciences	23	2.8
f) Science	47	5.6

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